DOCUMENT RESUME

ED 027 398 VT 007 684

Report of Second Annual Workshop for Coordinated Vocational-Academic Education (Brownwood, Texas, July 29 - August 1968). Units One-Seven.

Texas Education Agency, Austin. Dept. of Vocational Education.

Pub Date 68
Note-312p.
EDRS Price MF-$1.25 HC-$15.70
Descriptors-Beginning Teachers, Behavioral Counseling, Classroom Techniques, *Conference Reports, Cooperative Education, Disadvantaged Youth, Handicapped Students, *Instructional Materials, Interdisciplinary Approach, Special Programs, Teacher Developed Materials, *Teacher Education, *Teacher Education Curriculum, Teacher Improvement, Teacher Workshops, Teaching Methods, *Vocational Education
Identifiers-Coordinated Vocational Academic Education, Texas, *Workshop For Coordinated Vocational Academic Educ

Coordinated Vocational-Academic Education (CVAE), (formerly entitled Occupational Training), is the Texas Education Agency Vocational Program designed for students with special learning needs. It is intended for in-school youth possessing academic, socioeconomic, or other handicaps to such an extent as to prevent them from succeeding in standard educational endeavors. The program includes a combination of vocational and modified academic instruction that provides the dual educational opportunities of acquiring a saleable vocational skill while also acquiring basic knowledge in the fields of mathematics, science, English, and social studies. This report of the second annual CVAE workshop includes seven separate publications, six of which pertain to the six courses taught. The units are: Unit One, General Report of Workshop; Unit Two, Introduction to Teaching Coordinated Vocational-Academic Education; Unit Three; Organization and Use of Instructional Material; Unit Four, Shop and Classroom Organization and Management; Unit Five, Behavioral Analysis and Guidance; Unit Six, Implementation of Instructional Material; and Unit Seven, Orientation to Cooperative Training. (CH)

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REPORT OF SECOND ANNUAL WORKSHOP FOR COORDINATED VOCATIONAL-ACADEMIC EDUCATION. (Brownwood Texas, July 29 - Aug 1968).

UNIT ONE: General Report of Workshop.

THE TEXAS VOCATIONAL PROGRAM FOR STUDENTS WITH SPECIAL LEARNING NEEDS

C.V.A.E.

Brownwood, Texas **July 29—August 2, 1968**

TEXAS EDUCATION AGENCY, Austin.
DEPARTMENT OF VOCATIONAL EDUCATION.
AUSTIN, TEXAS

VT007684

Second Annual Workshop
for
Coordinated Vocational-Academic Education Teachers

July 29-August 2, 1968

Brownwood, Texas

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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UNIT ONE: GENERAL REPORT OF WORKSHOP

First of Seven-Unit Muster comprising Total Workshop Report.

TEXAS EDUCATION AGENCY

Department of Vocational Education
Coordinated Vocational-Academic Education

AUSTIN, TEXAS

PREFACE

This Report of the Second Annual Workshop includes seven sections. One unit is devoted to general information concerning the workshop while six units pertain to each of the six courses taught.

The total workshop report includes the following units:

UNIT ONE: General Report of Workshop

Course Objectives, Outlines and Instructional Materials:

UNIT TWO: Introduction to Teaching Coordinated Vocational-Academic Education

UNIT THREE: Organization and Use of Instructional Material

UNIT FOUR: Shop and Classroom Organization and Management

UNIT FIVE: Behavioral Analysis and Guidance

UNIT SIX: Implementation of Instructional Material

UNIT SEVEN: Orientation to Cooperative Training

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Organization and Use of Instructional Materials--See Unit Three
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"We are always in these days endeavoring to separate intellect and manual labor; we want one man to be always thinking, and another to be always working, and we call one a gentleman, and the other an operative; whereas, the workman ought often to be thinking, and the thinker ought often to be working, and both should be gentlemen in the best sense. As it is, we make both ungentle, the one envying, the other despising his brother; and the mass of society is made up of morbid thinkers and miserable workers."

———John Ruskin
(1819-1900)
English Author, Art Critic,
and Social Reformer

COORDINATED VOCATIONAL-ACADEMIC EDUCATION
(Explanation)

Coordinated Vocational-Academic Education, (formally entitled Occupational Training), is the Texas Education Agency Vocational Program designed for students with special learning needs. It is intended for in-school youth possessing academic, socio-economic, or other handicaps to such an extent as to prevent them from succeeding in standard educational endeavors. The program includes a combination of vocational and modified academic instruction that provide the dual educational opportunities of acquiring a saleable vocational skill while also acquiring basic knowledge in the fields of Math, Science, English and Social Studies. This dual approach enables students enrolled to reach maximum personal development, including employment potential, within their ability in the shortest possible time.

In implementing the program, one of the first responsibilities of a school system is screening and selecting prospective students who are eligible for enrollment. These students are usually low or underachievers within an I.Q. range of 70 to 95. They have no personal goals in life, lack self-confidence, and their abilities in communication skills are almost non-existent. Attendance in school is irregular, sometimes for real, but most of the time for imaginary reasons. They frequently come from low income families that are longtime recipients of welfare or other subsistence type aid. They fail most of their courses for various reasons. Surprisingly however, they are usually normal or above in potential ability to achieve satisfactorily. Specifically, the requirements for students to be enrolled are at least 14 years of age, behind one or more years academically or in achievement level and able to profit from the instructions.

After students are screened and selected, consideration is given to the vocational or occupational course to be offered. This selection is based on student and community needs with instruction being centered around a cluster of closely related occupations within a specific field of employment. The cluster concept of teaching the vocational class gives the program a certain amount of exploratory value, particularly during the early years of enrollment. For example, the cluster of General Construction Trades, could include instructional areas of carpentry, electricity, plumbing, masonry, concrete finishing, and painting. Students would be exposed to all these occupations during the first year of enrollment and should they find preference of one over the others, further specialization in that area could occur during enrollment in later years.

There is a choice between two types of classes. These are the pre-employment shop and cooperative part-time training classes. Pre-employment shop is scheduled for two consecutive hours (110 minutes) each school day and students are enrolled in modified academic and other courses during the remaining portion of the school day.

This type of class is normally utilized during the junior high and early high school years having the objectives of assisting enrollees to be employable as well as prepare them for entry into co-op type programs or regular vocational programs later in their scholastic career.

In Cooperative Part-Time Training there is a one hour (55 minutes) classe scheduled where students are taught the technical information for the on-the-job training which is received in local businesses. Co-op classes generally serve as a polishing-off process for students trained in pre-employment shop classes previously.

Another important aspect of Coordinated Vocational-Academic Education that should be mentioned is the modified academic instruction paralleling the vocational classes. The students are grouped and assigned to classes of Math, English, Science and Social Studies where they are taught on an ungraded, remedial basis where necessary. Instruction given in these classes is very practical and closely coordinated with the vocational cluster being taught. No more than 15 students are recommended for any one teacher. Some schools are making remarkable progress in this area by team teaching and utilizing the flexibility allowed schools in designing a program to fit the individual needs of students in their locale.

In Coordinated Vocational-Academic Education, as in all other innovative educational programs, the ultimate question is always "Yes, but does it work?" Evidently, superintendents, principals, and other educators must think so. The demand throughout the State for new and additional units continues to far exceed the Texas Education Agency's present financial and management structure set up to administer the program. After mid-term last year a questionnaire was mailed to school systems operating Coordinated Vocational-Academic Education Programs. This questionnaire was designed to determine the success of the program as well as to collect comparable information on students scholastic and behavioral attitudes prior to and after enrolling in Coordinated Vocational-Academic Education.

Results from this questionnaire show 49 school districts reporting on 3,162 students who entered the program for the first time starting in September of 1967. There was a 24% decrease in absenteeism. Many schools mentioned this figure might have been higher if Hurricane Beulah and a flu epidemic had not occurred during the semester used as the test semester. There was a 63% decrease in suspensions and a 55% decrease in referrals to the principals office for disciplinary reasons. Teachers are strongly encouraged to teach at a level where students can succeed in all phases of the program and as a result, there was a 79% decrease in failures. Amazingly, out of this 3,162 students, 189 had returned to school after dropping out to enroll in Coordinated Vocational-Academic Education.

Characteristics of Approvable Programs

Academic Phase of the Program

The academic portion of the program must be a special academic curriculum departing from traditional standards, and be conducted on an ungraded basis. Language, mathematics, science, and other courses must be adapted to the level and learning ability of the students. Students handicapped in reading ability must be provided remedial reading instruction instead of traditional English. Students of low achievement in mathematics, science or social studies must be given remedial instruction. Other academic provisions are:

1. Curricula must be flexible in all subject matter to teach on the achievement level of the student.

2. Remedial work shall be given students in areas of low level achievement parallel with identified ability.

3. Primary emphasis will be on the basic tools of language arts and mathematics, including skills in reading, speaking, writing and listening, and in acquiring basic arithmetic skills.

4. Content of academic instruction will be functional with practical application to occupational training.

Occupational Phase of the Program

The occupational training portion of the program will consist of a combination of classroom instruction with shop training, or actual on-the-job training, with students placed in part-time employment in the community. Training should be on a level adapted to the interest, aptitudes and ability of students.

The beginning phases of the training program for boys may be in relation to a cluster of occupations such as (1) general construction trades, (2) general mechanical trades or (3) horticultural occupations. The program for girls in the initial stages may be in occupational clusters relating to employment available to women, such as (1) domestic jobs, (2) employment in food service or (3) in office duplication work. However, these suggestions are not intended to imply that separate programs should be organized for girls and boys, since employment opportunities are available to both in many occupations.

As students progress in the program with adequate counseling and guidance, the occupational objective for which they have appropriate interest, aptitudes and ability should become evident.

TRAINING CLUSTERS
FOR COORDINATED VOCATIONAL ACADEMIC EDUCATION

HORTICULTURAL OCCUPATIONS

Instructional Areas

- Greenhouse Worker
- Landscaping
- Garden Center Worker
- Groundskeeping
- Nursery Worker

LITHO RELATED OCCUPATIONS

Instructional Areas

- Introduction to Course
- Copy Preparation
- Master and Plate Preparation
- Lithographic Processes
- Bindery and Related Mailroom Processes

LODGING AND RELATED SERVICE

Instructional Areas

- Housekeeping, Hotel and Institution Aide, General
- Assisting in Personal Services, Hotel and Institutions
- Replenishing Linens and Assisting with Linen Room Services
- Rendering Room Service
- Attending Check Room, Locker Room, and Rest Room
- Laundering Linens

MARINE REPAIR, GENERAL

Instructional Area

- Engine Repair (limited 2 & 4 cycle)
- Engine Installation
- Transmission of Power (mechanical)
- Welding (arc & acetylene)
- Marine Carpentry
- Marine Painting
- Repair of Auxiliaries (limited)

MECHANICAL REPAIR, GENERAL

Instructional Areas

- Small Engine Maintenance
- Welding
- Minor Automotive Maintenance
- Small Appliance Maintenance

METAL TRADES

Instructional Areas

- Welding
- Bench Metalworking
- Sheetmetal Fabricating
- Ornamental Ironworking

MISCELLANEOUS PERSONAL SERVICE

Instructional Areas

- Caring for Children
- Serving Food
- Housekeeping
- Laundering
- Aiding in Health
- Caring for Elderly Persons

OFFICE DUPLICATION PRACTICES

Instructional Areas

- Introduction to Course
- Stencil Duplicating Processes
- Direct Processes
- Offset Processes
- Embossing Processes
- Finishing Processes

TRAINING CLUSTERS
FOR COORDINATED VOCATIONAL ACADEMIC EDUCATION

APPAREL SERVICE

Instructional Areas

Constructing Apparel
Laundering Apparel
Dry Cleaning Apparel
Pressing Apparel
Dyeing Apparel
Repairing Apparel
Altering Apparel
Attending Wardrobe and Dressing Areas

BUILDING MAINTENANCE OCCUPATIONS

Instructional Areas

Carpentry
Plumbing
Electrical Wiring
Masonry
Painting
Flooring
Glazing
Pest Controlling

COMMERCIAL DISPLAY & DECORATION

Instructional Areas

Sign Painting
Show Card Lettering
Floral Arranging
Show Card Illustrating
Preparation of Display Props

CONSTRUCTION TRADES, GENERAL

Instructional Areas

Carpentry
Masonry
Cement Finishing
Electrical Wiring
Painting
Plumbing

DOMESTIC SERVICE

Instructional Areas

Housekeeping, General
Laundering, General
Preparing Meals
Repairing Garments, Minor
Repairing Household Furnishings, Minor
Assisting in Personal Services

FOOD SERVICE

Instructional Areas

Preparing Food
Storing Food
Serving Food
Cleaning Food Service Areas

FURNISHINGS SERVICE

Instructional Areas

Constructing Furnishings
Laundering Furnishings
Dry Cleaning Furnishings
Pressing Furnishings
Dyeing Furnishings
Repairing Furnishings
Altering Furnishings
Storing Furnishings

HOMEMAKER'S ASSISTANT

Instructional Areas

Cleaning, General
Laundering, General
Caring for the sick in the home
Preparing food in the home
Serving Food in the home
Caring for children in the home
Handling emergencies and meeting people outside family

Qualifications of Teachers

1. All counselors and teachers will be chosen because they have a deep desire to help students having academic, socio-economic or other handicaps.

2. Academic teachers shall hold regular teaching certificates, either provisional or professional, in the areas they will teach.

3. Teachers of occupational training phases of the program shall have a minimum of two years of successful employment experience in one or more occupational fields for which training is being included in the program. In addition, they should have a baccalaureate or higher degree from an accredited college or university, or meet requirements for vocational teachers in the occupational fields for which training is conducted.

4. To be fully certified each teacher of the occupational training phases of the CVAE program shall have successfully attended two summer workshops provided by the Texas Education Agency.

Workshop Overview

Over 250 Coordinated Vocational-Academic Education teachers from all over the State of Texas registered in Brownwood July 29-August 2, 1968 for an intensive workshop session. Headquarters for the school was the Browntowner Motor Hotel. Classes were held in the hotel and the city coliseum.

The workshop objective was to increase the effectiveness of these teachers, of junior and senior high school students with special learning needs, primarily in the area of occupational training.

Opening the intensive school Monday morning was a welcoming speech by Mayor Truman Harlow, after which Mr. Elmer Schick, Vocational-Technical Education Program officer, Department of Health, Education, and Welfare, United States Office of Education presented the keynote address.

During the second general session on Wednesday, July 31, 1968 Mr. John R. Guemple, Assistant Commissioner for Education, Texas Education Agency was in Brownwood to speak to the workshop participants on Trends in Vocational Education.

Included in the closing general session Friday, August 2nd was the presentation by Mr. Joe B. Neely, Director of Vocational Program Development, Secondary, Texas Education Agency, in which he discussed the outlook for Coordinated Vocational-Academic Education.

Mr. Bill E. Lovelace, Instructional Program Director, TEA and Mr. Thomas R. Jones, Chief Consultant, Coordinated Vocational-Academic Education lead a battery of eight teacher-trainers who taught in all-day workshop sessions Monday through Friday.

Teachers were instructed in the Philosophy of Coordinated Vocational-Academic Education, Organization and use of Instructional materials. Shop and Classroom Organization and Management, Behavioral Analysis and Guidance, Implementations of Instructional Material and Orientation to Cooperative Training.

The CVAE teacher participants were varied in their backgrounds and competencies. Some had Masters'Degrees while many had only a few college credits. There was one common characteristic, however, as all were required to have had some work experience in the particular occupational cluster in which he was teaching. Several have had extensive business experience in various capacities. Another characteristic of these teachers was the desire to teach and care for students with special needs. These teachers knew there were alternatives and choices in life.

Workshop Objectives

To provide teachers with techniques and methods suitable for use in teaching special needs students commensurate with their learning ability.

To prepare Coordinated Vocational-Academic Education teachers for a more efficacious 1968-1969 school year better serving students with special learning needs.

To satisfy necessary State requirements for certification of Coordinated Vocational-Academic Education teachers.

Workshop Publicity

250 Due For TEA Sessions

Approximately 250 Texas teachers will begin registering today at the Browntowner Motor Inn for the second annual workshop for coordinated vocational academic education.

Sponsored by the Texas Education Agency, the workshop will be held Monday through Friday with the first session scheduled to start at 9 a.m. Monday.

The keynote address Monday morning will be delivered by Elmer Schick, vocational technical edeucation program officer, department of health, education, and welfare of the United States Office of Education. His address will follow the welcome voiced by Mayor of Brownwood, Truman Harlow.

Thomas R. Seely, formerly of Brownwood, and now of Austin, is workshop coordinator. T. R. Jones of Austin will be among those in charge of various sessions. His workshop will be centered around orientation to cooperative training.

Others to conduct sessions are Ruth M. Payne and James J. Ulbrich, W. H. Fitz and Billie E. Lovelave, Louis R. Maneely and Albert H. Bartschmid.

Headquarters for the five-day workshop is the Browntowner Motor Inn and sessions will alternate between the Browntowner and meeting rooms of the Brownwood Coliseum.

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250 Sign Up For Session

Sessions are underway here for the second annual workshop for coordinated vocational-academic education sponsored by the Texas Education Agency.

Approximately 250 registered Sunday and this morning for the five-day event.

Highlight of this morning's meeting was the keynote address by Elmer Schick, vocational-technical education program officer, department of health, education and welfare, United States Office of Education.

The teachers were to reconvene this afternoon for group sessions. Workshops will continue through Friday.

Coordinated vocational-academic education is the Texas Education Agency's vocational program in in-school youth possessing academic, socio-economic, or other handicaps to such an extent as to prevent them from succeeding in standard education endeavors.

The workshop objective is to increase the effectiveness of teachers of junior and senior high school students with special learning needs, primarily in the area of occupational training.

The programs provide remedial instruction on the ability level of the students, and individualized shop or laboratory experience in selected occupational clusters.

Workshop Opens Group Sessions

Coordinated vocational-academic workshops continue at the Browntowner Motor Inn and the Brownwood Coliseum.

The five-day event which began Monday will continue through Friday. Both today's morning and afternoon agenda consist of individual group sessions. The workshop is sponsored by the Texas Education Agnecy.

Such topics as "Introduction to Teaching C.V.A.E.," "Organization and Use of Instructional Materials," "Shop and Classroom Organization Management," Implementation of Instructional Materials," and "Behavior Analysis and Guidance," will be discussed.

Workshop coordinator is Thomas R. Seely of Austin, a former Brownwood resident.

Workshops Continue at TEA Session

Group sessions continue at the Browntowner Motor Inn and the Brownwood Coliseum for the second annual workshop for coordinated vocational-academic education.

Sponsored by the Texas Education Agency, today's sessions include such workshops as "Organization and Use of Instructional Materials," "Introduction to Teaching C.V.A.E.," "Implementation of Instructional Materials," "Behavior Analysis and Guidance," and Cooperative Training Orientation."

Coordinator of the event is Thomas R. Seely of Austin, a former Brownwood resident. Other instructors include Ruth M. Payne, James J. Ulbrich, W. H. Fitz, Bill E. Lovelace, Louis R. Maneely, T. R. Jones, and Albert H. Bartsschmid.

ROSTER OF TEXAS EDUCATION AGENCY PERSONNEL

INVOLVED IN WORKSHOP

John R. Guemple, Assistant Commissioner for Vocational Education

Joe B. Neely, Director, Vocational Program Development

Bill E. Lovelace, Instructional Program Director

Thomas R. Jones, Chief Consultant, Coordinated Vocational-Academic Education

Albert H. Bartschmid, Consultant, Coordinated Vocational-Academic Education

W. H. Fitz, Consultant, Vocational Program Development

Ruth M. Payne, Consultant, Coordinated Vocational-Academic Education

Thomas R. Seely, Consultant, Coordinated Vocational-Academic Education

James J. Ulbrich, Consultant, Vocational Program Development

Instructors and Courses

Workshop Coordinator

Thomas R. Seely, Consultant, Coordinator Vocational-Academic Education

Instructors

Introduction to Teaching C.V.A.E.	Ruth M. Payne James J. Ulbrich
Organization and Use of Instructional Materials	W. H. Fitz and Bill E. Lovelace
Shop and Classroom Organization and Management	Louis R. Maneely
Behavioral Analysis and Guidance	Albert H. Bartschmid
Implementation of Instructional Material	Bill E. Lovelace and W. H. Fitz
Orientation to Cooperative Training	T. R. Jones

MONDAY
July 29, 1968

8:00-9:00 REGISTRATION . . . . Mezzanine

9:00-9:50 OPENING GENERAL SESSION . . . . Starlight

Invocation . . . . Albert Bartschmid

Welcome . . . . Truman Harlow
Mayor of Brownwood

Keynote Address . . . . Elmer Schick
Vocational-Technical Education Program Officer,
Department of Health, Education, and Welfare,
United States Office of Education

9:50-10:10 COFFEE BREAK

10:10-12:00 GROUP SESSIONS

Group I . . . . French
Introduction to Teaching C.V.A.E.

Group II . . . . Jacket
Organization and Use of Instructional
Materials

Group III . . . . Western
Shop and Classroom Organization and
Management

Group IV . . . . "A" Coliseum
Implementation of Instructional
Materials

Group V . . . . "B" Coliseum
Behavioral Analysis and Guidance

Group VI . . . . Starlight
Cooperative Training Orientation

12:00-1:00 LUNCH

1:00-2:50 GROUP SESSIONS

Group I . . . . Jacket
Organization and Use of Instructional
Materials

MONDAY (Continued)

Group II . . . . Western
Shop and Classroom Organization and Management

Group III. . . . . French
Introduction to Teaching C.V.A.E.

Group V . . . ."A" Coliseum
Implementation of Instructional Materials

Group IV. . . . ."B" Coliseum
Behavioral Analysis and Guidance

Group VI . . . . Starlight
Cooperative Training Orientation

2:50-3:10 COFFEE

3:10-5:00 GROUP SESSIONS

Group I. . . . . Western
Shop and Classroom Organization and Management

Group II. . . . . French
Introduction to Teaching C.V.A.E.

Group III. . . . . Jacket
Organization and Use of Instructional Materials

Group V . . . . "B" Coliseum
Behavioral Analysis and Guidance

Group IV . . . . "A" Coliseum
Implementation of Instructional Materials

Group VI . . . . Starlight
Cooperative Training Orientation

TUESDAY
July 30, 1968

8:00-9:50 GROUP SESSIONS

TUESDAY (Continued)

Group I . . . . French
Introduction to Teaching C.V.A.E.

Group II. . . . . Jacket
Organization and Use of Instructional Materials

Group III . . . . Western
Shop and Classroom Organization and Management

Group V . . . . "A" Coliseum
Behavioral Analysis and Guidance

Group VI . . . . Starlight
Cooperative Training Orientation

9:50-10:10 COFFEE BREAK

10:10-12:00 GROUP SESSIONS

Group I . . . . Jacket
Organization and Use of Instructional Materials

Group II. . . . . Western
Shop and Classroom Organization and Management

Group III . . . . .French
Introduction to Teaching C.V.A.E.

Group V . . . . "B" Coliseum
Behavioral Analysis and Guidance

Group IV . . . . "A" Coliseum
Implementation of Instructional Materials

Group VI . . . . Starlight
Cooperative Training Orientation

12:00-1:00 LUNCH

TUESDAY (Continued)

1:00-2:50 GROUP SESSIONS

Group I . . . . .Western
Shop and Classroom Organization and Management

Group II. . . . . French
Introduction to Teaching C.V.A.E.

Group III . . . . Jacket
Organization and Use of Instructional Materials

Group IV. . . . . "B" Coliseum
Behavioral Analysis and Guidance

Group V . . . . "A" Coliseum
Implementation of Instructional Materials

Group VI . . . . Starlight
Cooperative Training Orientation

2:50-3:10 COFFEE BREAK

3:10-5:00 GROUP SESSIONS

Group I . . . . French
Introduction to Teaching C.V.A.E.

Group II. . . . . Jacket
Organization and Use of Instructional Materials

Group III . . . . Western
Shop and Classroom Organization and Management

Group V . . . . "B" Coliseum
Behavioral Analysis and Guidance

Group IV. . . . ."A" Coliseum
Implementation of Instructional Materials

Group VI. . . . . .Starlight
Cooperative Training Orientation

WEDNESDAY
July 31, 1968

8:00-9:50 SECOND GENERAL SESSION . . . . Starlight

Trends in Vocational Education . John R. Guemple

9:50-10:10 COFFEE BREAK

10:10-12:00 GROUP SESSIONS

Group I . . . . Jacket
Organization and Use of Instructional Materials

Group II. . . . . Western
Shop and Classroom Organization and Management

Group III . . . . .French
Introduction to Teaching C.V.A.E.

Group V . . . . "A" Coliseum
Implementation of Instructional Materials

Group IV. . . . . "B" Coliseum
Behavioral Analysis and Guidance

Group VI . . . . Starlight
Cooperative Training Orientation

12:00-1:00 LUNCH

1:00-2:50 GROUP SESSIONS

Group I . . . . Western
Shop and Classroom Organization and Management

Group II. . . . . French
Introduction to Teaching C.V.A.E.

Group III. . . . . Jacket
Organization and Use of Instructional Materials

Group V. . . . . "B" Coliseum
Behavioral Analysis and Guidance

WEDNESDAY (Continued)

Group IV. . . . . "A" Coliseum
Implementation of Instructional Materials

Group VI. . . . . Starlight
Cooperative Training Orientation

2:50-3:10 COFFEE BREAK

3:10-5:00 GROUP SESSIONS

Group I . . . . French
Introduction to Teaching C.V.A.E.

Group II. . . . . Jacket
Organization and Use of Instructional Materials

Group III . . . . Western
Shop and Classroom Organization and Management

Group IV. . . . . "B" Coliseum
Behavioral Analysis and Guidance

Group V . . . . "A" Coliseum
Implementation of Instructional Materials

Group VI . . . . Starlight
Cooperative Training Orientation

THURSDAY
August 1, 1968

8:00-9:50 GROUP SESSIONS

Group I . . . . Jacket
Organization and Use of Instructional Materials

Group II. . . . . Western
Shop and Classroom Organization and Management

Group III . . . . French
Introduction to Teaching C.V.A.E.

THURSDAY (Continued)

Group IV . . . . "A" Coliseum
Implementation of Instructional Materials

Group V. . . . . "B" Coliseum
Behavioral Analysis and Guidance

Group VI. . . . . Starlight
Cooperative Training Orientation

9:50-10:10 COFFEE BREAK

10:10-12:00 GROUP SESSIONS

Group I. . . . . Western
Shop and Classroom Organization and Management

Group II. . . . . French
Introduction to Teaching C.V.A.E.

Group III. . . . . Jacket
Organization and Use of Instructional Materials

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Behavioral Analysis and Guidance

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Group II. . . . . Jacket
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Group III. . . . . Western
Shop and Classroom Organization and Management

THURSDAY (Continued)

Group V . . . . "B" Coliseum
Behavioral Analysis and Guidance

Group IV . . . . "A" Coliseum
Implementation of Instructional Materials

Group VI. . . . . .Starlight
Cooperative Training Orientation

2:50-3:10 COFFEE BREAK

3:10-5:00 GROUP SESSIONS

Group I. . . . . Jacket
Organization and Use of Instructional Materials

Group II. . . . . Western
Shop and Classroom Organization and Management

Group III . . . . .French
Introduction to Teaching C.V.A.E.

Group IV . . . . "B" Coliseum
Behavioral Analysis and Guidance

Group V . . . ."A" Coliseum
Implementation of Instructional Materials

Group VI . . . . Starlight
Cooperative Training Orientation

FRIDAY
August 2, 1968

8:00-9:50 GROUP SESSIONS

Group I. . . . . Western
Shop and Classroom Organization and Management

Group II. . . . . French
Introduction to Teaching C.V.A.E.

FRIDAY (Continued)

	Group III Organization and Use of Instructional Materials	Jacket
8:00-9:00	Group IV Implementation of Instructional Materials	"A" Coliseum
9:00-9:50	Group IV Behavioral Analysis and Guidance	"B" Coliseum
8:00-9:00	Group V Behavioral Analysis and Guidance	"B" Coliseum
9:00-9:50	Group V Implementation of Instructional Materials	"A" Coliseum
8:00-9:50	Group VI Cooperative Training Session	Starlight
9:50-10:10	COFFEE BREAK	
10:10-12:00	CLOSING GENERAL SESSION	
	Outlook for Coordinated Vocational-Academic Education	Joe B. Neely
12:00	ADJOURNMENT	

SPEECH

Keynote Address, by Mr. Elmer Schick, Vocational-Technical Education Program Officer, Department of Health, Education, and Welfare, United States Office of Education.

YES, YOU CAN BE PROUD

If I were to give a title to this address, it might well be "Yes, You Can Be Proud." You have every right to be proud of what Texas is doing through its Coordinated Vocational-Academic Education program to serve the occupational training needs of disadvantaged youth and the potential school dropout. Let us initially just check off the reasons why you can point with pride to your association with this vocational education program for youth with special needs. First, a sensitivity to realism has prevailed in the development and implementation of the curricula; next, the program has been guided by able and dedicated State leadership; third, it is one of the largest and most successful programs of its kind in the country; and lastly, the program offers each one of you a personal challenge--a challenge which you can face with stimulating pride.

For the above reasons I proudly display in my office the Certificates of Completion--one of them I now hold in my hand--I received after attending and participating in last year's Occupational Training teachers' workshop at San Angelo. Although I do thank "T. R." for the complimentary remark he just made about my being one of the workshop's outstanding graduates, in reality I do not think of myself being a graduate (nor, forbid, a "dropout"); these certificates represent to me, and I know they must to those who attended last year's workshop, the satisfactory completion of but the first phase of a sequence of rich and meaningful in-service education experiences which will enable one to better understand youth with special needs and to more effectively serve his occupational training needs and aspirations. When this week

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Address given by Mr. Elmer Schick at Coordinated Vocational-Academic Education Workshop, July 29, 1968, Brownwood, Texas.

comes to a close here in Brownwood, I know that each one of you will receive your Certificates of Completion with much the same pride as I did last year, knowing that they represent an association with a program that is doing so much to hold youth in school through realistic occupational training geared to their unique learning abilities and problems.

The Coordinated Vocational-Academic Education program is no make-believe or busy-work type of instructional program. The needs of society are its first concern. Its occupational offerings are justified in terms of actual job opportunities; the curricula and instructional content are developed and implemented in terms of actual manpower training requirements, with job analysis serving as the prime instrument and technique for validating instructional activity; and the varying learning needs and levels of its enrollees receive every consideration, with individualized instruction assuming a dominant role. Also, the program deemphasizes the "textbook" approach, encouraging the teacher to utilize to the fullest practical learning-instructional materials and to apply with flexibility a great variety of teaching methods, techniques and media. It should be added that the student is given every opportunity to practice and apply in a realistic manner in and out of school the skills, knowledges, and attitudes which he acquires.

Although I hope I do not embarrass anyone present at this workshop, I do feel a need to praise the State leadership that has gone into the planning and direction of this program. My "hat goes off" to such able and dedicated men as Messrs. Joe B. Neely, Bill E. Lovelace, T. R. Jones and others of the Texas Education Agency who have done so much to make this a "model" and exemplary vocational education program for persons with special needs.

For "my money" no other State has dedicated so much effective leadership talent in the implementation of a program such as this. Also, my congratulations go to Mr. John R. Guemple, Assistant Commissioner for Vocational Education, for the administrative support and understanding he has been giving to this program.

The successes and achievements of Texas' Coordinated Vocational-Academic Education program come to the forefront when one compares the progress and characteristics of the CVAE program with the findings and recommendations reported by the 1968 National Advisory Council on Vocational Education in its publication "The Bridge Between Man and His Work." In this evaluation of vocational education under the Vocational Education Act of 1963 the Council paints a rather gloomy national picture of vocational education serving youth with special needs. On practically every count this criticism cannot be directed toward the Texas program. The Council makes these statements: "One of the two new basic purposes which was introduced by the Vocational Education Act of 1963 into the Nation's vocational education system was to serve those persons who could not succeed in a regular program because of educational, socio-economic or other obstacles . . . There is little evidence that this purpose has been accomplished so far . . . This objective has hardly been touched . . . The special needs of those who cannot succeed in a regular vocational program are still being largely ignored or neglected by the educational community . . . Only about 3 percent of the Federal money was spent on vocational education of persons with special needs . . ."

The Advisory Council reports these national enrollment figures--for 1967 some 174,000 special needs students were served (81,000 of them were enrolled in separate special needs programs and 93,000 students received special services while enrolled in regular vocational education programs). This actually means that Texas, with its some 7,000 students enrolled in CVAE (and CVAE is a separate special needs program), can be credited with serving nearly 9 percent of the total enrollment reported by the 50 States and territories. This picture becomes even more favorable for Texas when it is known that of the 81,000 figure a good number of States included substantial numbers of institutionalized individuals with physical handicaps (deaf, blind and crippled) and those who were prison and correctional institution "inmates," all of whom not being served by the local public school systems. The CVAE is a local public school program serving youth with educational and socio-economic handicaps--the disadvantaged groups with which the Vocational Education Act of 1963 is principally concerned.

The Council also reports that in many States there is a confusion regarding the term, "students with special needs" and, therefore, it requires further clarification. This is certainly not true for Texas, for the CVAE program has established specific criteria for identifying this type of student. The Council also indicates that there will be continued delay in implementing vocational education for persons with special needs until some suggested models are made available. I can proudly say that the Coordinated Vocational-Academic Education program IS a model.

The Council also states that the "special needs" classification is emphasized not only by the Vocational Education Act of 1963 but also by the Manpower Development and Training and the Economic Opportunity Acts; and because these latter acts do not require matching funds and because States and localities have been reluctant to finance new or special programs, many States have turned to these two sources almost exclusively for funding projects in the "special needs" category. Although in Texas substantial use of Manpower Development and Training and Economic Opportunity funds are being made, the scope and size of the Coordinated Vocational-Academic Education program is testimonial proof that State and Federal vocational education funds are not being siphoned away from "special needs" programs. Of course, this does not mean that the CVAE program has all the money it needs; however, I am optimistic that the proposed Amendments to the Vocational Act of 1963, which are now in Committee after receiving unanimous support from both the Senate and the House and which establish additional funding for vocational education for persons with special needs, will mean that Texas' Coordinated Vocational-Academic Education program will be able to grow to its fullest potential. However, even now it can be proudly stated that Texas is doing much more than the great majority of the States in serving the occupational training needs of the socio-economically disadvantaged. Texas can proudly say that it is meeting effectively two of the challenging statements offered by the National Advisory Council on Vocational Education, i.e., "A substantial portion of vocational education funds must be reserved for the 'hard-to-reach' and the 'hard-to-teach' and "the students who are left out are those with low motivation and poor preparation, though these are two handicaps with which vocational education copes well."

Now, let me share with you a concern which has been voiced by another national advisory body, the National Advisory Council on the Education of the Disadvantaged, in its evaluation of the administration and operation of programs under Title I of the Elementary and Secondary Education Act of 1965. This concern relates to the special qualities which the teacher of disadvantaged youth must possess--accordingly a definite challenge for YOU and one which should be the basis for personal pride on your part, since you have been selected to serve the occupational training needs of the educationally and socio-economically handicapped through Texas' Coordinated Vocational-Academic Education program.

Although this Council does acknowledge that considerable progress has been realized under Title I (i.e., smaller teacher-student ratios; teachers getting better support services such as: remedial tutoring, curriculum planning, and guidance and counseling); better use of sub-professionals; improved and more learning materials; and better technological teaching devices, the following problems still continue to reduce the effectiveness and success of instructional programs under this Title:

1. Too many teachers still cannot depart from conventional classroom attitudes and curricula which cannot serve effectively the disadvantaged, i.e., the inability to adapt academic content to the special problems of disadvantaged children.
2. Teachers' attitudes regarding the disadvantaged child are too often negative in quality.
3. The rapport between the teacher and the disadvantaged child is often not one of mutual understanding and appreciation.

The presence or absence of these three factors distinguishes between a good and a poor educational program for disadvantaged youth, and in-service teacher education has too seldom accepted the challenge implied by these factors. It might be added here that many teachers who teach in deprived neighborhoods even take on a low concept of THEMSELVES. Let us not think of our program as a "dumping ground" for misfits; be proud that we can accept the challenge of serving youth with special learning needs, one that other programs often are not able to accept or meet. I consider this challenge, and I know you must too, an honor.

Now, what responsibilities does this challenge hold for us who are associated with the Coordinated Vocational-Academic Education program? First, let us work actively at understanding the disadvantaged child--his characteristics and the many factors which affect his behavior and attitudes. Although there are many negative factors working to his disadvantage, let us do two things: (1) get to know better the positive factors that are working for him and (2) think of him as an INDIVIDUAL and not a stereotype with certain common negative characteristics.

Let us downplay (because they ALL do not apply to every disadvantaged child) yet understand in depth and appreciate such influential factors as (1) physical (including the influences of inadequate nutrition and the residual effects of illness); (2) home conditions (such as: little or no home guidance and assistance, lack of positive parental models, no place or time for home study, overcrowded living which does not permit privacy or healthy personal development, and lack of exposure to the English language or the over exposure to poor speech patterns); (3) the inadequacies of community and neighborhood, such as: lack of examples of people who have high ideals and who live constructive lives; a dearth of institutions and facilities which can encourage and stimulate development; and the filth, dilapidation, poverty, neglect and violence which are often present in slum environment.

In the Office of Education publication, The Youth We Haven't Served, it is stated that the socio-economically handicapped student in the classroom manifests one, often more than one, and sometimes all of the following characteristics:

- Low-level reading ability.
- Limited formal vocabulary and poor speech construction and diction.
- Relative slowness in performing intellectual tasks.
- Poor health and poor health habits.
- An anti-intellectual attitude.
- Indifference to responsibility.
- Nonpurposeful activity, much of which is disruptive.
- Limited experiences of the sort schools assume most of their students have had with their families; for instance, contact with social, cultural, and governmental institutions.
- A failure syndrome resulting from apathy and lack of self-confidence.

This may be very true; in fact there are many many other such behavioral and attitudinal characteristics, some of them even contradictory of each other--for example: docile and apathetic vs. hostile, aggressive and antagonistic and lack of confidence vs. a sense of self-sufficiency. The point is if we are to accept these characteristics, then let us be certain that we understand the causes for them in each individual child. We must always think of them as characteristics upon which understanding can materialize. Remember that the disadvantaged child is not so much anti-intellectual and antagonistic or apathetic; the problem lies in the fact that the teacher expects the child to want to learn--the child does want to learn, but not necessarily what the teacher is teaching. Often the disadvantaged child is inattentive for the purposes of survival. As defense mechanisms his ears become skilled at not hearing and his eyes at not seeing. For example, a child who is one of a family of 11 adults and children and who lives in a three-room apartment must in defense learn not to see and hear, especially when the family has to share a bathroom with other families on the same floor; when the husband downstairs comes home often very loudly drunk; when the wife and husband next door repeatedly argue very vocally, often resulting in mutual physical violence; and when no night passes without a number of the babies in the apartment house crying to the top of their lungs. What has happened is that the student has tried to cope with this noisy environment by developing a non-hearing and no-seeing defense mechanism. I often believe that our youth today, both disadvantaged and otherwise, who apparently do not listen in class, are to a degree this way because they permit themselves to be subjected to all this loud and clamorous music of today. Are there any husbands in the audience who have wives that often say, "Darling, you never listen to what I am saying."? Is there an explanation for this non-listening behavior?

Seriously, we as teachers of the socio-economically handicapped are obligated to understand the causes of their various behaviors and attitudes. And, even more, we should build upon the strengths and positive characteristics of the disadvantaged. They have practical knowledge, i.e., they have been catapulted into adulthood, therefore, being more worldly, less gullible and more knowledgeable about how to adjust to their environment and the hard knocks of life at an early age; they have strong in-group feelings, often with an impulse toward mutual aid and a desire for close and personal relationships; they are often self-reliant and independent; they have an appreciation of the value of education, if not in school; many are creative, motivated and proficient in areas which their interest lie; they are capable of working well and hard on a specific task or assignment which has purpose for them; and they are often very competitive. I, as a child, lived in poverty and semi-slum conditions, and I know that this environment built in me a high sense of competitiveness which has served me in good stead during my adulthood. I know that a number of you also lived in poverty during the Depression Years, and I am certain that many of the fine qualities you possess today have been the result of your interaction with that environment. Even today I am most concerned with seeing that the dollar goes as far as possible. Maybe I carry this attitude too far, but I never go through the checkout line in a supermarket without observing closely what the cashier is charging me for each item and I never leave my table in a restaurant before checking over carefully the accuracy of my bill.

But, understanding and appreciating the behavioral characteristics of the educationally and socio-economically handicapped and their causes is only one side of the coin; we must also become more effective in our human relationships with disadvantaged youth. Our professional and personal philosophy about youth with special needs must actively support the concept that they can learn if they are respected and they can learn if it is com-

municated to them that those who are responsible for teaching them believe they can learn. The most successful teachers are those in whose classes student achievement is greatest because they accept their students as worthwhile individuals and *make them conscious of this acceptance.* The quality of "teachability" is dependent largely upon the quality of the relationship between the student and the teacher. The disadvantaged student, in particular, must feel wanted, respected and accepted as an INDIVIDUAL, having worth in his own right, and not feel that he is thought of as a STEREOTYPE with certain common, often negative, characteristics. The successful teacher of "special needs" students is one who *prizes* the learner--his feelings, his opinions, and his person; he leads the student to a sense of self-respect, dignity, and worth, thereby assisting him to build a favorable self-image. Every action of the teacher must demonstrate that he believes the student is fundamentally trustworthy. All this means that the teacher should be a straight-forward and down-to-earth individual, acting in a simple, dignified fashion and responding with physical warmth without overdoing it. He must let the student feel that he, the teacher, cares for and has an interest in the learner without demonstrating possessiveness; he must be friendly, never letting a day go by without a good laugh with his students, yet not becoming too familiar. Friendliness should never get out of hand to the point that respect is lost or standards are lowered. The teacher of the socio-economically handicapped must not and need not run a popularity contest; actually, his students respect the kind of firm leadership which offers them a sense of security. All this can be summed up as EMPATHY for his students. You should continue to ask yourself: "Do I really understand my students; do I really like my students; do I respect them; do I have faith in them; and do I have hope for them?" However, empathy is not a one-way commodity; it should flow not only from the teacher to the student but also from the student to the teacher--an interacting process. There must be MUTUAL respect for, interest in, liking for, appreciation of, and confidence in each other. The "battle really is won" when your students reciprocate and take a real interest in you as a teacher and as a person. As for your confidence in your students, never let it be said of you that you believe that: "these children cannot learn; these children do not want to learn; and these children have parents who are not concerned." A person with these feelings is a poor risk as a teacher of the disadvantaged.

Nothing could be more tragic than to have your students say or think "he is not worth studying for." Yes, you will certainly have disciplinary problems with a number of your students. Handle them immediately with firmness and fairness, but never view them as personal affronts to you; treat them only as interferences with the learning situation in the classroom or shop.

In closing may I share with you some of the important qualities which the effective teacher of the educationally and socio-economically handicapped should possess:

1. There is no room for dogma. This teacher does not possess preconceptions as to why a particular disadvantaged child acts and responds as he does. This teacher does not stereotype the socio-economically handicapped student with common characteristics and behavior, nor does he have "pat" solutions about behavioral patterns. This teacher knows he does not know and starts from there.

2. This teacher is not afraid to experiment, and he is always studying and appraising the effectiveness of his own performance, seeking research data which will help identify ways to improve his teaching and human relationship skills.
3. He demonstrates a flexibility in teaching styles and techniques. He acquires an ever-increasing repertoire and employs them with intelligence. He also knows that flexibility is a quality that must extend beyond teaching methods and techniques.
4. He is willing to fail and risk failure, yet is continually striving for success as it relates to promoting student growth and better student-teacher relations.
5. He is a shrewd observer of his students and he uses many criteria in getting to the reasons for their behavior, whether it be overt or otherwise. He is never willing to categorize or lump students into stereotypes.
6. He is willing to find out about and appreciate the frames of reference his pupils use in interpreting the world about them.
7. He recognizes that he must work as a member of an educational team--the vocational instructor, the academic teacher and the counselor.
8. He is socially minded and displays openness.
9. He is tolerant of ambiguity in its many forms.

10. And, finally, but not the least, he is a MASTER TEACHER in his field; and because of this, he is less tied to traditional instructional materials and methods. He knows his field, and his students know he knows it. Needless to say, disadvantaged youth, in particular, respect expertness.

It has been a real pleasure addressing you today, and I am looking forward to meeting and talking with you during the workshop. Yes, you have every right to be proud--

1. The Coordinated Vocational-Academic Education program of Texas--its guidelines, its curricula, and its instructional aspects--is one of realistic soundness.
2. The State staff at the Texas Education Agency is directing the program and its in-service teacher education phase with dedication and expertness.
3. The program is one of the most successful and extensive programs of its kind in the United States.
4. And, what a tremendous and satisfying personal challenge each one of you have in serving the occupational training needs of the educationally and socio-economically handicapped.

Thank you.

SPEECH

A Changing Society by Mr. John R. Guemple, Assistant Commissioner for Vocational Education, Texas Education Agency.

A CHANGING SOCIETY

Introductory Remarks.

Texas, as well as the United States, is faced during the next few months with continued social unrest brought about by change and the desire for more, faster, and better change. It is difficult to assess the social dynamics of this change. America owes her greatness to an atmosphere which has, in the past, been conducive to change.

Changes are brought about in society by a process which has been called "dynamic tension." That is, through dialogue, two persons or two groups of people with divergent ideas, concepts, or beliefs attempt through discussion, debate, and argument to modify the beliefs of the other individual or group. Social philosophers call these two viewpoints the thesis and the anti-thesis, but working together, the two groups or two individuals are able to find an acceptable and workable middle ground. This, according to social philosophers, becomes a synthesis of two divergent ideas. It is the firm belief of educators, politicians, and social thinkers that America and democracy has, through the years, been the best environment where this process of dynamic tension and this program of significant dialogue can take place.

No single approach can or should be proposed as the only proper one in the pursuit of social justice that is the nation's most important goal. This applies to educational programs, as well as social welfare, poverty, and other programs with these kinds of labels. There is no panacea for civil rights, no single prescription for the problems of minority groups,

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Address given by John R. Guemple at Coordinated Vocational-Academic Education Conference, July 31, 1968, Brownwood, Texas.

the problems of the unemployed young people of this nation, or any other significant group whose needs and problems are being exposed to public view through civic disobedience and social unrest.

American public education, particularly the vocational system, has been severely criticized in late months for not providing successful educational programs in our nation's urban ghettos and the poverty stricken sparsely populated rural areas of the State and of the nation. Texas is a unique State. Most of the problems of the United States are found in Texas. Five of the twenty largest cities in the United States are Texas cities. Seventy-five to eighty percent of the total population of this State reside in urban centers. We have a large disadvantaged Negro population. We have a large culturally rich, but equally disadvantaged, Spanish speaking Mexican-American population. One person out of every nine in the State of Texas has less than a fifth grade level of academic achievement. One of every eight has less than an eighth grade education. You pour all of these problems in a large kettle, stir carefully, and you find the problems are further complicated by society, increasingly technological in nature where more and more people are working less and less with their hands, and more frequently found in industry and business and in the home, engaged in problem solving, decision making, and matching resources, both human and material, to the problems through the decision making process.

These changes in skills from manipulative to cognitive have particularly affected American women. For example, the correct operation of the washing machine requires the careful reading of the manual to ensure the family clothing as long a life as possible. The measurement and use of bleaches, detergents, and water softeners require precision and knowledge previously not required of a housewife. Even the toaster and color television require precise adjustments. Besides appliances, the housewife must have knowledge about bookkeeping (and hopefully income tax accounting), buying, selling, car maintenance, interior and exterior decoration, and a multitude of other skills previously not required by our society. No one today can depend on being just a "hard" worker. The better trained and prepared, the more he can earn. Women who work often also play the role of wife, mother, confidant, and consultant. America is rapidly becoming a nation of planners, equipped with machines to do the actual work. American education in the large city school systems is beginning to hear the distant drums of discord in suburban America. Each year, two and one-half million students are graduated from American high schools. Of these, fifty-three percent continue their education at institutions of higher learning. Not all of these graduate. The remaining forty-seven percent, 1,175,000 young men and women, terminate their formal education with high school graduation. In addition to these, nearly a million who drop out each year before completing high school should be added. This brings us to over two million students each year who terminate their education at the twelfth grade level or earlier. Only about 400,000 of these students, or twenty percent, have some marketable vocational training skill developed in their high school educational experience. The remaining 1.7 million must enter the labor market with no real skill and, as we know, the existing market offers little opportunity for the unskilled. In the meantime, we have been deluged by an avalanche of materials, statistics, publications, speeches, and meetings devoted to the problem of developing our nation's manpower in the public school.

In Texas, averages are behind the national. For example, in 1964 we graduated in this State in all of the public senior high schools 97,148. But when these same young people started their public education twelve years earlier, the enrollment in the first grade was 200,280. In other words, only forty-seven percent of those who started first grade completed high school.

Let me give you the specifics that will illustrate what I mean. Last year, the average unemployment rate for the United States for the whole year was 3.9 percent. Now, this is probably the lowest national average we've had in recent years. The real problem is that in looking at the labor market statistics more carefully, you realize that the unemployment rate among teen-age workers was three times as great as the national average, or nearly twelve percent. Among non-white young workers, it was six times as great, or nearly twenty-five percent; and among non-white female teen-age workers, it was thirty-nine percent. Among other things, this means that even though non-white females who had jobs had the least desirable ones or ones which held little opportunity for advancement or stability in employment. Now, again let me caution you that statistics for the nation are not representative in what occurs in Texas.

Very little attention has been given to our nation's vocational system until as recently as 1963. Most of the projects initiated since the early 1950's to improve public education, have been built around the premise that the Soviet Union was dramatically ahead of us in scientific achievement. These plans were far removed from the vocational process necessary to develop marketable skills for the children in our nation's ghettos, slums, large urban centers, and the economically impoverished, sparsely populated rural segments of the nation where the population is decreasing, and the small rural school system less and less able to provide the necessary skills for these young people to compete for jobs in the city. We now have modern math, modern physics, programmed instruction, computer-assisted instruction, teaching by television, team teaching, teaching by machines, teacher aides, non-graded classes, and educational objectives designed for behavioral outcomes. These new ideas have proven more effective than the old methodologies, but this is not the point. The issue is that each has been developed within an individual discipline, not particularly relevant to any of the others, or perhaps more to the point, relevant to the mission of vocational education, which is devoted to preparing the entire person for a useful life, including skills with which an appropriate level of income can be achieved which will be stable and which will support a person and his family at a level in keeping with the economy of this great nation of ours.

School officials are aware of the many potentially talented young people who are unable to unlock their capacities in outdated, lockstep, conventional programs of instruction. They are ready to initiate carefully formulated educational programs that consider the economically disadvantaged. The underachiever whose underachievement is directly caused by lack of communication skills and facility in standard English, the talented and the average student are given great consideration in building the modern curriculum. Our school officials appropriately are planning programs for those who have mechanical, visual, and other potential talents for which the academic program offers little. Our task as vocational educators now, and in the years to come, is to plan better, utilize all of the latest techniques other disciplines are using, and address our programs to those disadvantaged, handicapped, yes, and even talented, students for whom the traditional vocational curriculum may not have been adequate.

Yes, I must say the responsibility is ours. Society is changing. Society is made up of people whose roles are changing. As roles change and society changes, further changes are indicated. Unless education changes to keep pace with the changing times, changing technology, changing homes, changing world, education becomes a useless process which contributes little to the future development and growth of this nation.

Let me close these remarks with a story. Plato, one of the greatest teachers who ever lived, was a great teacher because he used analogies. My favorite is the story of the cave. Plato said there are people who live in caves. Some of them sith with their backs to the light and stare into the gloom and shadows. There are others who sit with their faces to the light and see the distorted images of those who pass between them and the light. There are those who go outside the cave into the light. Of these people, some return to the cave because the light is disturbing, frightening. There are those who remain in the light. The light, according to Plato's story, is knowledge; the darkness--ignorance. Now, according to Plato, the truly great people are those who leave the light and go back into the cave and lead others out. Plato says that these people are teachers.

SPEECH

Closing Workshop Speech

Outlook for Coordinated Vocational-Academic Education

by Mr. Joe B. Neely, Director, Vocational Program Development, Texas Education Agency.

CLOSING SPEECH (Brownwood CVAE Workshop)

By Mr. Joe B. Neely

Thank you Mr. Jones. My speech will be like the latest Paris fashion; long enough to cover the subject and short enough to be interesting. I'm afraid, too, that Lincoln spoke the truth about commencement speakers when he said, "The world will little note, nor long remember what we say here."

I want to compliment you Mr. T. R. Jones on a good workshop. Permit me to tell you a little known incident about T. R. Jones when he was a parachutist in the Army. The paratroopers had gone up for their first jump. Everything went off in perfect order until the last man, who happened to be T. R., came forward to jump.

"Hold it'" shouted his commanding officer. "You're not wearing your parachute."

"Oh, that's okay, sir," replied T. R. "we're just practicing, aren't we?"

Seriously, it was a privilege to work with you teachers as well as with the CVAE training personnel. I hope that you will see definite evidence, after returning to the field, that this workshop experience has been helpful, and that you will give us an evaluation from time to time of the outcomes of the workshop.

We appreciate your desire to be in a program of this type and hope that you have gained some valuable information and have perhaps been inspired and reassured somewhat.

The way I see it, this workshop is just a mouse race to get you ready for the rat race next month!

You know--there are only two classes of teachers, so far as compensation is concerned--those who are underpaid, and those who have no business in the classroom. It is impossible to place a cash value on the influence of a good teacher. By good teacher I do not necessarily mean those of high academic training, desirable as the training may be. The good teacher is a pleasant, understanding person who not only is skilled in the art of presenting subject matter but one who just as skillfully, by precept and example, leads children into desirable habits and attitudes.

Actually there is no final way to judge the worth of a teacher except in terms of the lives of those he has taught.

I am full of admiration for our CVAE teachers and am confident you will invariably do a good job and give our youth with special learning needs and opportunity to do something and to become somebody. The very fact that someone cares is enough to give a great boast to their morale. When you return to the job, work closely with your principal, counselors, and teachers. Particularly, you vocational teachers team with the CVAE academic teachers and arrange the teaching in a coordinated curriculum each to reinforce the other and the subject matter. If you don't believe in cooperation, just observe what happens to a wagon when one wheel comes off.

Another thing--since you have considerable freedom in developing meaningful and interesting learning activities for your students, CVAE requires such traits in its teachers as originality, boldness, flexibility, creativity and ingenuity. Through appropriate effort you can develop these traits and increase your creative abilities. Be flexible in your thinking, and original and unique in your ideas and motivation. With such ingenuity the occupational training portion of the program can be made exciting, fascinating, and pleasurable.

One last bit of advice. You cannot handle young men and women as the drover would cattle. You drive cattle. You lead people. A man is an individual, an entity, a human. Unlike cattle, he can think and reason, which makes it all the more difficult to control him by force. Driving him, cracking the whip, ignores his dignity as a human being, insults his ability, causes him to rebel--either now or later.

Thanks again for your participation, drive home carefully and may the coming school year be the best ever'

Comment and Reaction Sheet

Coordinated Vocational-Academic Education Workshop
Browntowner Motor Hotel
Brownwood, Texas
July 29-August 2, 1968

Your comments and suggestions regarding the questions listed will be helpful in planning and conducting workshops in the future.

1. What are your comments and reactions regarding the workshop sessions?

2. What specifically would you like to have included in a Coordinated Vocational-Academic Education Workshop in the future?

3. How do you plan to use information gained at this workshop in the further development of the Coordinated Vocational-Academic Program at the local level?

The following is a list of topics covered at the workshop. Please indicate their value to you by circling your choice. Write a statement to verify your selection.

1. Excellent   2. Good   3. Average   4. Poor

4. Introduction to teaching Cooperative Vocational-Academic Education.

1.   2.   3.   4.

5. Introduction to teaching Organization and use of Instructional Materials.

1.   2.   3.   4.

6. Shop and Classroom Organization and Management.

1.	2.	3.	4.

7. Implementation of Instructional Materials.

1.	2.	3.	4.

8. Behavioral Analysis and Guidance.

1.	2.	3.	4.

9. Cooperative Training Orientation.

1.	2.	3.	4.

Please use the reverse side for additional ideas you would like to share concerning suggestions for future workshops which may be beneficial.

COORDINATED VOCATIONAL-ACADEMIC EDUCATION
WORKSHOP EVALUATION

The closing activity of the Coordinated Vocational-Academic Education Workshop was the evaluation of the workshop by the participants. For this evaluation, an instrument (see page 50) was devised and distributed in an effort to secure comments and reactions.

Evaluation Procedure

One-hundred and ninety-one registered workshop participants were given the instrument; out of this number 184 were returned. Only seven of the evaluation forms were not returned. One-hundred and thirteen individuals rated the workshop sessions as excellent, informative, and well organized. Sixty persons rated the workshop good; nine persons rated the workshop average. One person made no comments on the workshop and one rated the workshop as poor.

Complimentary Comments

One hundred participants out of the 184 were challenged and felt that they could do a good job with the Coordinated Vocational-Academic Education Program at the local level. One-hundred and five of the participants out of the 184 felt they had gained insight about handling students with special learning needs and methods of teaching them. Eighty-nine favorable comments were made regarding the value of the hand-out sheets in implementing programs. Seventy-seven teachers commented that they had gained more self-assurance and had a much better understanding of the Coordinated Vocational-Academic Education Program.

The comments listed below describe the feelings of some other participants:

> "I feel more confident about teaching since attending the workshop and will 'toot my horn' for the Coordinated Vocational-Academic Education Program everywhere I go."
>
> "The purposes of the program and ways of conducting it have been clearly defined. I'm off to a good start."

Negative Comments

Twenty-three out of the one-hundred and eighty-four workshop participants made this comment:

> "Do not hold courses in separate buildings."

One participant out of the group stated:

> "The workshop was boring and the sessions were too long."

Thirty-five of the workshop participants commented:

> "Facilities were inadequate and undesirable."

Twenty out of thirty-two participants in one class stated:

> "The room where one class was held was too small to accommodate the group comfortably."

Participants Suggestions For Future Workshops

In response to the question asked concerning what specifically the participants would like to have included in a Coordinated Vocational-Academic Education Workshop in the future some responses are listed:

> "I would like to have a display of materials teachers have found useful in developing programs effectively at the local level."
>
> "Allot some time for an exchange of ideas or hold a 'Swap-Shop' Session."
>
> "Include more breaks in the next workshop."
>
> "There is need for a planned social function in connection with the workshop."

"Incorporate more discussion and student participation in workshops in the future."

"Include Behavioral Analysis and Guidance for first year workshop participants."

"Conduct an enriched program for students who have participated in the workshop for two years."

"Sectional meetings for various occupational clusters would be beneficial."

"Develop more materials that relate to Home and Community Service Occupations."

"The use of more visual aids is desirable."

"Provide tables to accommodate all persons in each course."

"Conduct workshop in a larger convention center where facilities are conducive to work."

"Include academic teachers in the Coordinated Vocational-Academic Education Workshop."

"The selection of facilities for future workshops for teachers of Coordinated Vocational-Academic Education should compliment the four-step plan of instruction. Inadequate facilities curtail student participation which restricts the use of well planned lessons to Step II. (Presentation) only."

"Some reorganization of course offerings would enhance class sessions and prevent replication of subject content."

"Include teaching a course in Analysis and Course Making."

Participants Plans for Using Information Gained

Item three of the evaluation device asked this question: How do you plan to use the information gained at this workshop in the further development of the Coordinated Vocational-Academic Program at the local level? The replies were many and varied:

"I plan to use information gained to develop better course outlines for the local program in which I am working."

"Information gained at the workshop will be used to make my teaching more effective. Course outlines, operation sheets, lesson plans and other instructional materials will be used in the program."

2

"Information received at the workshop will aid greatly in developing saleable skills in my students."

"The material received and information gained at the workshop will be used in developing course outlines and other materials based on the needs and interests of students in the community."

"The information received at the workshop will aid in developing a good program to provide students a dual opportunity for achievement in acquiring basic knowledge and skills as well as preparation for employment in the lesser skilled occupations."

"Instruction given during the workshop will help me develop a curriculum that is flexible and that can be used on the achievement level of the students."

Participants Rating of Course

The workshop participants were asked to rate each course attended using this scale: 1 point - excellent; 2 points - good; 3 points - average; and 4 points - poor. Thus, the lower the grade point the higher the rating given by the participant. Course ratings were as listed:

- Introduction to Teaching Cooperative Vocational-Academic Education 2.07 (good)
- Organization and Use of Instructional Materials 2.32 (average to good)
- Shop and Classroom Organization and Management 1.80 (good to excellent)
- Implementation of Instructional Material 2.51 (average)
- Behavioral Analysis and Guidance 1.27 (good to excellent)
- Cooperative Training Orientation 1.22 (good to excellent)

REGISTRANTS AT CVAE WORKSHOP
Brownwood, Texas
July 29-August 2, 1968

NAME	ISD	COURSE	GROUP
Alcala, Alfred	Flatonia	General Construction	III
Alexander, Rebecca	Galveston	Home & Community	I
Alton, Anna B.	Brenham	Home & Community	I
Anders, Herbert	Lamar Consolidated	General Mechanics	IV
Bagley, R. M.	Carrollton-Farmers Branch	Director	
Baker, Delores	Brazosport	Home & Community	IV
Ball, D. Jr.	Big Spring	General Construction	III
Bell, Howard Jr.	El Paso	General Mechanics	IV
Benkendorfer, John	Corpus Christi	General Mechanics	II
Biggs, James	San Saba	General Construction	IV
Blackmon, Grady	Zephyr	General Construction	III
Blackwell, Fay	West Rusk	Home & Community	I
Boggan, L. H.	Edinburg	Director	
Bose, Evelyn	Dumas	Home & Community	I
Boston, Roosevelt	Galveston	Coordinator	VI
Bowman, W. L.	Carrollton-Farmers Branch	Coordinator	VI
Brady, Leatha Beth	Pharr-San Juan-Alamo	Commercial Display & Decoration	IV
Bridges, Wallace	Corpus Christi	General Mechanics	IV
Brookshire, William	Dallas	Drafting	III
Browder, Joyce	Carrollton-Farmers Branch	Office Duplication	III
Brown, Dorothy	Tulia	Home & Community	IV
Brown, Earnest	Dumas	General Mechanics	II
Brown, Hugh	Arlington	Coordinator	VI
Bryant, Vivian	Elgin	Home & Community	I
Burnaman, Jerry	Bay City	General Mechanics	IV
Burleson, Luther	Birdville	Director	
Cantu, Melinda	El Paso	Home & Community	IV
Cardwell, James	El Paso	General Mechanics	IV
Cassity, Ray	McAllen	General Mechanics	IV
Castillo, Jose	Edinburg	General Metals	IV
Castleberry, S. M.	Boys Ranch	Academics	III
Clay, Ernest	Galveston	General Construction	III
Clay, Kay	Mount Pleasant	Home & Community	IV
Clendennen, Billie	Huntsville	Home & Community	I
Collier, Vernon	Beeville	General Mechanics	IV
Conley, Betty	Big Spring	Home & Community	I
Cook, Harold	Birdville	Coordinator	VI
Cooper, Ashley Ann	Tomball	Home & Community	I
Cooper, Allen	DeKalb	General Construction	III
Crider, Glendine	Tuloso-Midway	Home & Community	V
Crowley, Thomas	Corpus Christi	General Mechanics	IV

NAME	ISD	COURSE	GROUP
Dahman, Wallace	Brenham	General Construction	III
Dean, Evan	Beeville	General Construction	IV
Dennis, Mary Jane	San Saba	Home & Community	I
Dickerson, Bobbie Ann	Mount Pleasant	Home & Community	I
Die, Tom G.	El Paso	General Metals	IV
Domorad, Frank	Pasadena	Coordinator	VI
Dowty, Jim	Dimmitt	General Mechanics & Metals	IV
Dunn, Lucille	Corpus Christi	Home & Community	IV
Dyer, Carole	Dimmitt	Home & Community	IV
Echart, Connie	Arlington	Coordinator	VI
Eckhoff, Herman	Houston	Coordinator	VI
Elliot, Thomas	Three Rivers	General Mechanics	IV
Faine, Levarn	Amarillo	General Mechanics	IV
Fondren, Lucille	Corpus Christi	Home & Community	I
Forehand, Marian	Three Rivers	Office Duplication	IV
Freeman, Dorothy	Taft	Home & Community	IV
Frnka, Vickie	Bryan	Home & Community	I
Gallenkamp, Harry	Tuloso-Midway	General Construction	IV
Gibson, Vinita	Amarillo	Home & Community	I
Gillespey, Arthur	El Paso	General Mechanics	II
Grebe, Charles	El Paso	General Mechanics	II
Greenly, Richard	Houston	Coordinator	VI
Hall, Carol	El Paso	Home & Community	I
Hargis, DeAnna	El Paso	Home & Community	VI
Harper, Roberta	El Paso	Home & Community	IV
Harris, Carlton	Mount Pleasant	General Construction	III
Harris, Charles	Longview	Upholstery	II
Harris, O'Neil	Arlington	Director	
Hatcher, A. R.	Beeville	Director	IV
Hebert, Charles	Carrollton-Farmers Branch	Counselor	VI
Helmers, Anthony	San Angelo	General Mechanics	II
Henderson, Lloid	La Grange	General Construction	III
Hickman, Audrey	Fort Worth	Cosmetology	II
Hill, David	San Angelo	General Construction	III
Hogan, Carol	Fort Worth	Cosmetology	II
Holland, Maurice	El Paso	General Construction	IV
Holland, Thomas C.	Lockhart	General Mechanics	IV
Hopkins, Cecil	Pharr-San Juan-Alamo	General Mechanics	IV
Hopson, Pat	Gatesville	General Mechanics	IV
Howsley, James	El Paso	Director	
Hughes, Van E.	Dimmitt	Office Duplication	III
Hunter, Marvin	Hereford	Office Duplication	III

NAME	ISD	COURSE	GROUP
Jackson, Gary	El Paso	General Mechanics & Metals	IV
Jacoby, Aaron	San Angelo	Horticulture	IV
Janicek, Kathryn	Cuero	Home & Community	IV
Janszen, Vivian	Corpus Christi	Home & Community	I
Jernigan, Jean	Corpus Christi	Home & Community	IV
Johnson, A. D.	Mount Pleasant	General Construction	III
Johnson, Daylon	Boys Ranch	Coordinator	VI
Johnson, Joe	Cuero	General Mechanics	II
Johnson, Juanita	Royal	Home & Community	IV
Johnson, Slater H.	Big Spring	General Construction	III
Jones, Nell	Corpus Christi	Home & Community	V
*Junge, Mary	Birdville	Coordinator	VI
Kearny, Joseph	Dallas	Upholstery	II
Kelley, Peggy	Lockhart	Home & Community	I
*Kiefel, Joan	Brazosport	Health	VI
Kinser, Wesley	White Settlement	Coordinator	VI
Langhart, Wanda	Houston	Coordinator	VI
Largent, Mike	Kirbyville	General Construction	III
Laseter, Janice	Amarillo	Home & Community	I
Lindsey, Margaret	Bryan	Home & Community	I
Livesay, Nancy	El Paso	Home & Community	I
Livingston, Traswell	Brenham	General Construction	III
London, Claire	Longview	Home & Community	I
Love, Joe	Tulia	General Construction	III
Luckenbach, Vada	La Grange	Home & Community	I
Ludeman, Richard	Brazosport	General Construction & Metals	III
Malone, Billy Bob	Birdville	General Mechanics	VI
*Martin, Edna	Northside (S.A.)	Coordinator	VI
Martin, Helen	Snyder	Home & Community	V
Martin, Mae Belle	Alto	Home & Community	V
Mayer, Lester	Corpus Christi	General Construction	III
Mayfield, Helen	Beaumont	Home & Community	I
Merritt, Billy	Mount Pleasant	Office Duplication	III
Michie, Jan	DeKalb	Home & Community	I
Miller, Irene	Houston	Coordinator	VI
Mize, Edwin	Birdville	General Mechanics	II
Morton, James	Birdville	General Mechanics	II
Myers, Janice	El Paso	Home & Community	I
McCown, Mary	Snyder	Home & Community	I
McCoy, Frances	Houston	Home & Community	I
McCullar, Helen	Houston	Home & Community	I
McGowen, Beulah	Lamar Consolidated	Home & Community	V
McKay, Linda	Beeville	Home & Community	V
McKinney, Corrinne	San Angelo	Home & Community	I
McQuay, Joe S.	Amarillo	General Mechanics	II

*Health Occupations

NAME	ISD	COURSE	GROUP
Newland, A. N.	Fort Worth	General Mechanics	V
Norris, Reba	El Paso	Home & Community	V
Norton, Carol	Buckner Home	Director	IV
Odell, Ronald	Cuero	General Mechanics	II
Oldham, Therman	Dimmitt	General Construction	V
Oliver, Robert	Corpus Christi	General Metals	V
Patrick, Lemoin	Carrollton-Farmers Branch	General Construction	V
Phillips, Viola	El Paso	Home & Community	V
Pipes, Larry	West Rusk	General Construction	IV
Price, Lawrence	Elgin	Horticulture	III
Prycer, James	Edinburg	General Mechanics	V
Radons, Gus	Carrollton-Farmers Branch	General Mechanics	V
Ramirez, Tomas	Hebbronville	General Metals	II
Ramsey, Bette	Amarillo	Home & Community	V
Ray, Chas	Taft	General Mechanics	II
*Reddell, Willa	Lubbock	Coordinator	VI
Reynolds, Clyde	Snyder	General Mechanics	II
Roberson, Mike	Brazosport	General Metals	II
Roman, Reymundo	Marfa	General Construction	III
*Romine, Camille	Galveston	Coordinator	VI
Ross, Ann Gertrude	Weslaco	Home & Community	V
Sample, Ida	Alamo Heights	Office Duplication	III
Sanford, Tommy	Pasadena	Coordinator	VI
Scharschmidt, Rudolph	Lockhart	General Mechanics	II
Schramm, Reeta	Brenham	Home & Community	I
Schuller, Harry	El Paso	General Metals	II
Scott, Betty Jane	Bay City	Counselor	V
Seale, Joyce	Corpus Christi	Home & Community	I
Shaw, Bill	Buckner Home	General Construction	II
*Sheffield, Grace	Alamo Heights	Coordinator	VI
Shelander, Jack	Corpus Christi	General Metals	V
Shoemaker, William	Dumas	General Construction	III
Siler, Lena	El Paso	Coordinator	VI
Sims, Mildred	Houston	Coordinator	VI
Smith, Alex	Alamo Heights	General Mechanics	II
Smith, Travis	Alto	General Construction	III
Soli, Hatti Fay	Bay City	Home & Community	V
Stanley, James	Shiner	General Construction	III
Stanton, D. E.	Corpus Christi	General Metals	V
Stephenson, Nelson	Dimmitt	Office Duplication	V
Stooksberry, Carson	Dallas	General Welding	V
Summers, O. W. Jr.	Dallas	Bricklaying	III
Svatek, Henry	Wharton	General Construction	III

*Health Occupations

NAME	ISD	COURSE	GROUP
Tanner, C. W.	Big Spring	Coordinator	VI
Tanner, Opal	Big Spring	Academics	VI
Turner, Bob G.	Dallas	Power Mechanics	II
Turner, Don	El Paso	Supervisor	
Ummel, Ruben	Mineola	General Construction	III
Waltrip, Juanell	Levelland	Home & Community	I
Webb, Glenda	Big Spring	Home & Community	I
White, Laura	Gatesville	Home & Community	IV
White, Sara	Corpus Christi	Home & Community	I
Whittemore, Loraine	Lockhart	Home & Community	V
Whittenburg, N. L.	Snyder	General Mechanics	V
Wienken, Karen	Beeville	Home & Community	I
Wiginton, Lela	San Angelo	Home & Community	I
Williams, Catherine	Arlington	Coordinator	VI
Williams, Milton	Pasadena	Coordinator	VI
Williamson, Hermnia	Houston	Coordinator	VI
Wiltshire, Wallace	Corpus Christi	General Metals	II
Woods, Jerry	Huntsville	Agriculture Related	III
Wright, Stanley	El Paso	Supervisor	VI
Wright, Verna	Houston	Coordinator	VI
Wyse, Elsie	Houston	Coordinator	VI

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REPORT OF SECOND ANNUAL WORKSHOP FOR COORDINATED VOCATIONAL-ACADEMIC EDUCATION

UNIT TWO: Introduction to Teaching Coordinated Vocational-Academic Education

THE TEXAS VOCATIONAL PROGRAM FOR STUDENTS WITH SPECIAL LEARNING NEEDS

C.V.A.E.

Brownwood, Texas July 29—August 2, 1968

VT007684

TEXAS EDUCATION AGENCY
DEPARTMENT OF VOCATIONAL EDUCATION
AUSTIN, TEXAS

Second Annual Workshop
for
Coordinated Vocational-Academic Education Teachers

July 29-August 2, 1968

Brownwood, Texas

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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UNIT TWO: Course Objectives, Outlines and Instructional Materials for INTRODUCTION TO TEACHING COORDINATED VOCATIONAL-ACADEMIC EDUCATION

Second of a Seven-Unit Muster comprising the Total CVAE Workshop Report.

TEXAS EDUCATION AGENCY

Department of Vocational Education
Coordinated Vocational-Academic Education

AUSTIN, TEXAS

COURSE OBJECTIVES

Introduction to Teaching Coordinated Vocational-Academic Education

Objectives of the Course

1. To motivate CVAE instructors.
2. To give beginning CVAE instructors brief history of CVAE.
3. To inform CVAE instructors of the CVAE goals and objectives and types of students who will benefit from the training offered in the course.
4. To inform beginning CVAE instructors how to organize their methods and materials to make their teaching more effective.
5. To emphasize the importance of careful planning and organization.
6. To illustrate teaching methods and when to use each method in order to make teaching most effective.
7. To make CVAE instructors aware of the Four Step Method of Teaching and how to use it.
8. To demonstrate and illustrate various teaching aids and how to use them most effectively.

COURSE OUTLINE

INTRODUCTION TO TEACHING COORDINATED VOCATIONAL-ACADEMIC EDUCATION

I. ORIENTATION (45 Minutes)

- A. BRIEF HISTORICAL BACKGROUND OF OCCUPATIONAL TRAINING
    1. REGULAR VOCATIONAL PROGRAMS
    2. SPECIAL EDUCATION PROGRAMS
    3. VOCATIONAL EDUCATION ACT OF 1963
- B. SCOPE OF THE WORKSHOP
    1. METHODS OF INSTRUCTION
    2. ORGANIZATION, DEVELOPMENT AND USE OF INSTRUCTIONAL MATERIAL
    3. SHOP AND CLASSROOM ORGANIZATION AND MANAGEMENT
- C. STANDARDS AND POLICIES
    1. CERTIFICATION REGULATIONS
    2. COURSE OBJECTIVES
    3. DUTIES AND RESPONSIBILITIES
    4. RULES AND REGULATIONS

II. TEACHING AND LEARNING (1 Hour 15 Minutes)

- A. THE FIVE SENSES
- B. THORNDIKE'S LAWS OF LEARNING
- C. HABITS AND HABIT FORMATION
- D. MOTIVATION OF LEARNERS
- E. FACTORS AFFECTING LEARNING

III. THE FIVE STEP PLAN OF INSTRUCTION (1 Hour 30 Minutes)

A. PREPARATION

B. PRESENTATION

C. APPLICATION

D. TEST

E. SUMMARY OF FOLLOW-UP

IV. TYPES OF LESSONS (1 Hour)

A. MANIPULATIVE SKILL LESSONS

B. RELATED INFORMATION LESSONS

V. METHODS FOR INSTRUCTING (1 Hour 30 Minutes)

A. DEMONSTRATION

B. SUPERVISED ACTIVITY

C. ILLUSTRATIONS

D. QUESTIONS AND ANSWERS

E. ILLUSTRATED SHOP TALK

F. DISCUSSION

G. PROBLEM SOLVING

H. OTHERS

VI. THE LESSON AND ITS CONTENT (30 Minutes)

A. WHAT TO TEACH

B. THE JOB TARGET

C. LESSON AIMS

D. LESSON TITLE

VII. PROPER USE OF VISUAL AIDS (1 Hour 30 Minutes)

- A. 16 MM FILM PROJECTORS
- B. OVERHEAD PROJECTOR
- C. FILM STRIP PROJECTOR

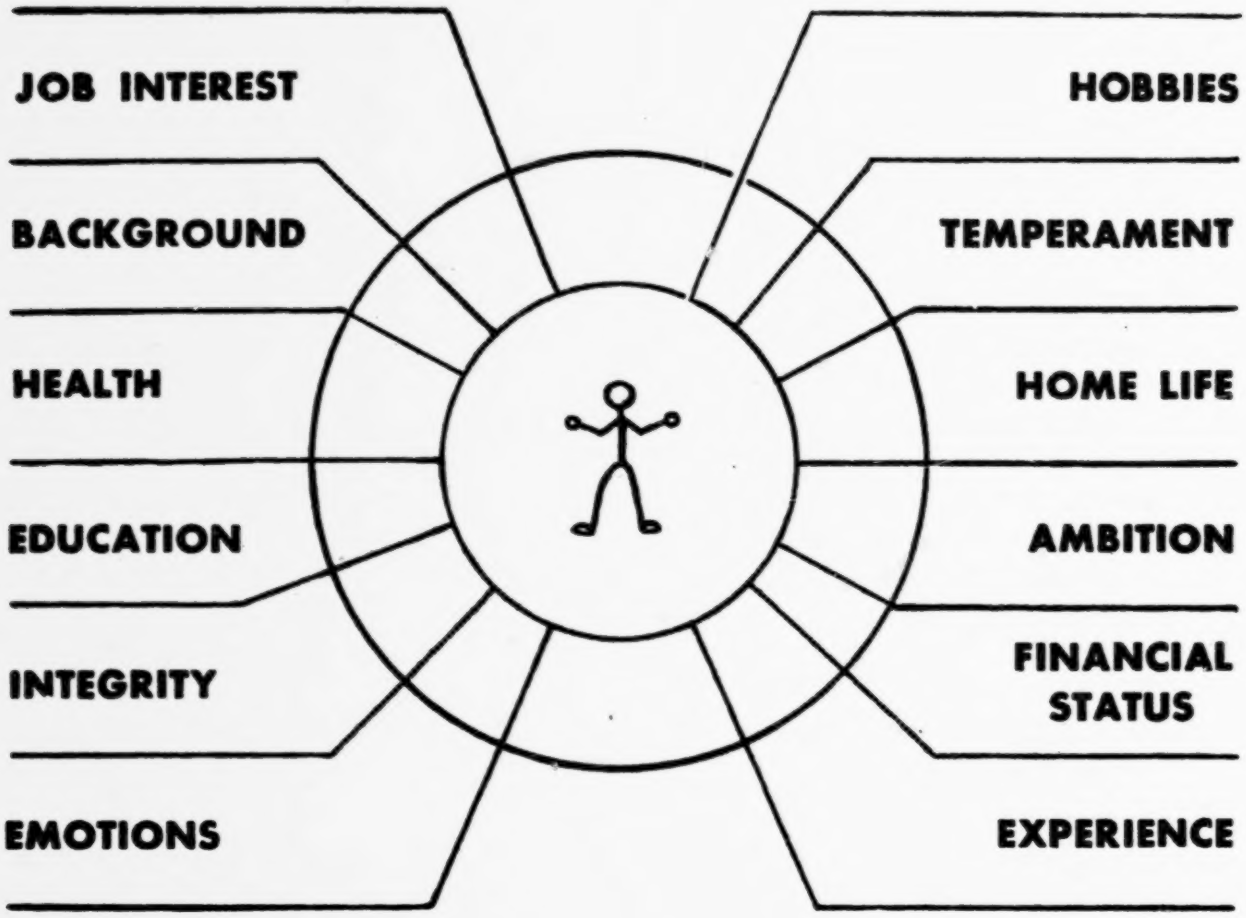
VIII. MEASUREMENT AND EVALUATION (1 Hour)

- A. REASONS FOR TESTING
- B. TYPES OF TESTS
- C. USE OF TEST RESULTS

IX. FINAL EXAMINATION (1 Hour)

INSTRUCTIONAL MATERIALS

AN INDIVIDUAL



An Individual is the sum total of his TRAITS, CHARACTERISTICS, HABITS, BELIEFS, INTERESTS, EXPERIENCES—his STRENGTHS and his WEAKNESSES —GOOD QUALITIES and SHORTCOMINGS.

He is motivated by these Traits and Characteristics. They have a direct bearing upon him—upon how he does his job— upon how he feels about his job.

The better you know and understand him, the better you will be able to work with him.

SOME IMPORTANT FACTORS IN LEARNING

IN WHICH INDIVIDUALS DIFFER

The good supervisor realizes that individuals differ in their mental faculties as well as in their physical make-up and makes provisions for adapting his training techniques to best fit the learning abilities of each individual worker. Following are some factors which greatly influence a person's ability to learn and which the person doing the training must recognize in "individualizing" his instruction.

HOT DIGGITY!

INTEREST - Without interest on the part of workers in the job or lesson at hand, instruction is more or less futile. A person learns well those things in which he has a vital, sustained interest; while on the other hand, his mental processes rebel and cease to function when he is bored or fails to see a personal benefit in learning whatever is being taught.

INTELLIGENCE - Briefly stated, intelligence is the ability to respond quickly and successfully to new or unusual situations. It enables the learner to "tie up" new ideas with his past experiences and knowledge. The so-called native intelligence of a person changes but little throughout his life and is not increased by education.

PAST EXPERIENCES - A person's background of experiences forms the basis for receiving additional knowledge. Thus, the more extensive and varied one's experiences are, the easier it is for him to acquire more knowledge. This fact disproves the old saying, "You can't teach an old dog new tricks."

CONCENTRATION - It is impossible for a person to fix his attention on one idea for more than a second or two. Yet he may re-focus his attention quickly when his mind wanders. The ability to do this repeatedly is known as "power of concentration."

WELL-BEING - Mental and physical comfort increase one's power of concentration. On the other hand, pain, discomfort, and such emotions as grief, irritation, anger, and worry, greatly hinder mental processes. The good training man tries to put his group at ease in a cheerful frame of mind before presenting the lesson.

MEMORY - A person's ability to remember--which incidentally, has nothing to do with his intelligence--is extremely important in learning. Factors which influence memory are vividness, uniqueness, frequency, primary (the first experience with something), and association.

SELF-CONFIDENCE-All other factors being equal, a person learns something better if he thinks he can. Fear of bodily injury, fear of criticism or humiliation, make learning difficult, if not impossible. The good supervisor never purposely assigns a worker a task beyond his ability to perform, nor says or does anything that would tend to make a learner lose confidence in himself.

IMAGINATION-Imagination is the power to form mental pictures of things not actually present. It helps the craftsman to visualize the finished job before he begins it. A man without imagination can never learn to read a blueprint.

Subject: Individual Differences

How people differ	Why they differ	How differences show up	What the Instructor can do about it
1. Ability	1. Inheritance 2. Training	1. Gets things done	1. Various assignments 2. Different machines 3. Use as foreman or other responsibility
2. Looks	1. Inheritance 2. Deliberate plan	1. Physical characteristics 2. Dye hair, or nails	1. Show uniform, or 2. Work clothing in shop
3. Interests	1. The fad 2. The gang approves 3. Natural differences	1. "You just slay me" 2. Intense interest in certain school activity	1. Several jobs with same or similar operations 2. Capitalize on "Future Plans"
4. Dislikes	1. Family attitude 2. Unpleasant experience	1. Emotional stability 2. Anger, fear, pleasure 3. Anti-social attitude	1. Very routine assignments
5. Understanding	1. Observes 2. Listens 3. Uses head 4. Or, neither of	1. Good in theory 2. Slow to learn	1. Vary teaching methods 2. Group learners
6. Learning	1. Family insistence 2. Natural inclination 3. Because of a friend	1. Order, sequence continuity	1. Vary amount of work 2, Vary difficulty of work 3. Vary sequence of units
7. Likes	1. Nature 2. Environment	1. Reactions to situations 2. Over confidence	1. Make instruction social in nature 2. Vary nature of work 3. Guide in comparisons

LAWS OF LEARNING - THORNDIKE

I. Law of Readiness

Readiness

You learn a thing when you really want to learn it and feel a need for it. You must have the urge to learn. You must be interested in what you are doing. Conditions must be right for you to learn.

II. Law of Effect

Effect

You must get some pleasure out of the learning process. This pleasure or satisfaction comes from the success you are having in learning the job at hand and has a tendency to make the learner want to develop more skill. The more certain you are of success, the greater the desire to learn.

1. We like to do those things out of which we get a lot of satisfaction. Action gives satisfaction.
2. We try to avoid doing those things which are displeasing or cause annoyance. Not to act gives annoyance.

III. Law of Exercise

Exercise

We also like to do over again the things you have learned to do well, so drill or practice becomes pleasure rather than drudgery.

1. The more often we do a thing, the better we are able to do it - the more skill we acquire.
2. When much attention and feeling are put into doing the job or exercise, you will learn more in a given time.

CVAE-101

THE THREE LAWS OF LEARNING

1. The Law of Readiness

Readiness has to do with the condition of the neurones (nerve cells) of an individual which makes learning possible. The mental process involved in learning are extremely complex and take place only under certain conditions. Stated simply, learning takes place only if the learner is in the proper frame of mind. To be in a state of readiness the learner must have a desire to learn. Desire to learn may be created by one or more influences:

1. Interest
2. Curiosity
3. Anticipation
4. Hero-worship
5. Rewards
6. Promotion
7. Praise
8. Social recognition
9. Economic security
10. Fear of rebuke)
11. Fear of punishment) Negative

The teachers' ability to motivate the student largely depends upon (1) his own enthusiasm and interest in the subject, (2) his knowledge of the subject, and (3) his spirit of encouragement and cooperation.

Some things the teacher may do to motivate the student:

(1) Explain exactly what the student is supposed to learn.

(2) Explain clearly how the thing to be learned will benefit him.

(3) In teaching shop subjects, show the student samples or examples of the job to be learned.

(4) Explain industrial applications of all technical information taught.

(5) When feasible, provide for field trips, plant visitations, and the like.

(6) Answer all pertinent questions on the subject; reject unrelated questions tactfully.

(7) A certain amount of "showmanship" in teaching is a good interest stimulator.

AROUSING AND MAINTAINING INTEREST IN THE THING TO BE TAUGHT IS THE MOST DIFFICULT--IF NOT THE MOST IMPORTANT--JOB OF THE TEACHER

CVAE-120

2. The Law of Effect

If the individual is in a state of readiness, learning has a pleasurable "effect" upon the learner; he wants to continue to learn because he gets a feeling of pleasure and satisfaction from the mental and physical activity involved in learning a particular thing which he desires to learn.

On the other hand, not to do the things he wants to do is annoying to an individual, and to be forced to do things he does not want to do is even more annoying.

Successful experiences and accomplishments in a learning situation are satisfying to the learner and are necessary for him to maintain an interest in the thing being learned. If, on the other hand, the learner meets with repeated failure in learning, he loses interest and usually wants to quit his task.

HOW THE TEACHER MAY HELP MAINTAIN INTEREST IN INSTRUCTION

1. Organize his course so that the students progress gradually from the easier instructional units and lessons to the more difficult ones with a minimum of unsuccessful experiences and failures.
2. Individualize his instruction so as to provide for differences in individual students.
3. Use a varitey of methods and techniques in teaching a lesson. Audio-visual aids are effective in maintaining interest.
4. Provide for students activity and participation in each lesson.
5. Compliment the student when he really deserves it; seldom rebuke or humiliate him.
6. Give recognition to outstanding achievement; publicize class activities.
7. Provide for suitable activities or job assignments that will challenge the abilities of the advanced student.
8. Make it possible for the learner to attain early success.
9. Avoid situations which might cause annoyance, fear, or worry on the part of the student.

3. The Law of Exercise

An individual tends to repeat experiences that are satisfying and, in doing so, builds habit patterns. The formation of correct habit patterns is the chief objective in teaching any trade.

Merely repeating an act over and over--without motivating influences--certainly does not result in habit formation. Practice or "exercise" must have a specific aim or purpose which the learner clearly understands. Measurable improvement by the student in fulfilling the purpose of the exercise--like other successful accomplishments--produces personal satisfaction which tends to cause the learner to repeat the activity until he has eventually mastered it.

Incorrect habits cannot be simply forgotten by the learner; they must be replaced by correct habits. This process is almost invariably difficult for the student and requires unusually strong motivating forces.

SOME THINGS THE TEACHER SHOULD REMEMBER
ABOUT THE DEVELOPMENT OF CORRECT HABITS:

(1) An assignment involving practice, drill, or exercise should have one definite purpose: to improve skill, precision, or craftsmanship; to develop speed or ease of action; to reduce errors, to overcome fear, and the like.

(2) Mere repetition of acts is not enough in the development of correct habits by a learner. There must also be measurable improvement and the personal satisfaction that comes with it.

(3) In general, improvement due to practice or "exercise" should be measurable and capable of being noted by the learner himself.

(4) The amount of repetition required depends upon the ability of the learner and the intensity of the motivating forces.

(5) Everything being equal, the more often an act is repeated, the easier it can be performed and the sooner it will become an automatic action (habit).

PRINCIPLES OF MOTIVATION

1. MAKE MATERIAL INTERESTING
    (a) Make your teaching interesting and appealing.
    (b) Make the job seem real and worth while.

2. MAKE THE LEARNERS AWARE OF THEIR PROGRESS
    (a) Establish a concrete goal (i.e., something definite to work toward).
    (b) Know how much to expect from the students.
    (c) Inform students of their progress.
    (d) Make effective use of individual and group competition.
    (e) Show a genuine interest in the progress and welfare of your students.

3. USE PRAISE AND REPROOF
    (a) Use praise to encourage students.
    (b) Make both praise and reproof refer specifically to jobs that have been done well.
    (c) Accompany reproof by praise for those aspects of the job that have been done well.
    (d) Always accompany reproof by a clear explanation or demonstration of what should be done.
    (e) Give reproof promptly and then consider the matter a closed incident.

THE LEARNING PROCESS

NOTE--The following summary statement is prepared for those teachers who desire to make use of some of the laws that affect learning. It should be remembered that rarely does only one law operate at a given time. Rather, it is the total effect of the operation of several laws that determines behavior in a given situation. So we often find the qualifying phrase, "everything else being equal."

The learning process is concerned with the strengthening and weakening of native reactions. To every stimulus through one or more of the five senses there is a response. The path in the nervous system over which the impulse travels is capable of being changed; it is said to be "a modifiable connection" between stimulus and response. Modifying the connection usually results in a variation of, or difference in, the reaction to the stimulus.

Learning is a specific reaction; we learn the thing to which we react.

Listed below are simple statements of factors in the learning process, and one example of their many practical applications in training activities:

1. LAW OF USE, DISUSE, EXERCISE

(a) Use--When a modifiable connection between a situation and a response is exercised, other things being equal, the strength of that connection is increased.

(One correct performance establishes the connection, and each correct performance thereafter--practice--strengthens the connection. This law is important in habit forming.)

(b) Disuse--When a modifiable connection between a situation and a response is not exercised during a length of time, the strength of the connection is decreased.

(Discontinuing, for a time, a skill in which a bad habit has been formed will make it easier to break down the bad habit and avoid its interference in the establishment of the correct habit.)

(c) Frequency--Other things being equal, the more frequently a connection has been exercised the stronger the connection.

(Repetition of a correct practice tends to strengthen a performance and make it habitual.)

(d) Recency--Other things being equal, the more recent the exercise, the stronger the connection between the situation and response.

(The proper time to have the learner practice skill is immediately after he has learned.)

(e) Association and exercise--By means of association and exercise any reaction which the organism can make may be attached to any stimulus to which the organism is sensitive.

(Apply the principles learned in a course to various situations in order that the learner does not associate the principle with one particular situation and be unable to use it in another situation.)

2. LAWS OF EFFECT, SATISFACTION, ANNOYANCE, READINESS

(a) Satisfaction--The individual tends to repeat and learn quickly those reactions which are accompanied or followed by a satisfying state of affairs.

(Praise or other rewards for good work aid the learning process.)

(b) Annoyance--The individual tends not to repeat or learn quickly those reactions which are accompanied or followed by an annoying state of affairs.

(An individual should not be embarrassed by harsh criticism of his work lest he come to feel that he is incapable of good work.)

(c) Satisfaction--Approval of an act by one from whom approval is desired is a potent factor in the learning process.

(Supervisors should see that persons whose judgment the learner respects are aware of his progress. One such person should be the supervisor himself.)

(d) Disapproval of an act by one in whom approval is desired is a potent factor in the learning process.

(Criticism of the worker's actions affects his learning. The specific outcome is usually determined by other factors, e.g. the attitude and intention of the person offering criticism.)

(e) For a bond which is ready to act, to act is satisfying.

(A learner who is ready to perform should be permitted to do so.)

(f) For a bond which is ready to act, not to act is annoying.

(When a learner is ready to perform, delaying the activity adversely affects his learning.)

(g) For a bond that is not ready to act, not to act is satisfying.

(When the learner is not ready to perform, he prefers not to act. He usually wishes to listen to the presentation of the material to be learned until he feels that he is better prepared.)

(h) For a bond which is not ready to act, to act is annoying.

(When the learner is not prepared, he should not be asked to perform.)

3. MIND-SET, INNER URGE, DRIVE, INTEREST, EFFORT

(a) Mind-set--A "set" toward an end means readiness in and action of pertinent bonds with reference to that end.

(When a person has his mind made up to do a given job, the preparation step can be passed over rather rapidly. The preparation step is intended in part to create such a mind-set.)

(b) Interest--Interest furnishes the drive or urge in the learning process.

(Interest should be established in the preparation step. In so doing, many training difficulties will be overcome.)

(c) Effort--Persistent effort is conditioned by interest. A hindrance, if not too great, will spur effort.

(The length of the learning task that can be set is determined largely by the interest of the individual in that task.)

(d) Coercion--Coercion produces a contrary mind-set thereby inherently hindering the attainment of the end set up by external forces.

(Attendance or non-attendance on classes should be at the learner's choice.)

4. INDIVIDUAL DIFFERENCES

Human beings differ in physical and mental make-up. Provision must be made for these differences in the learning process.

(The time required and the difficulty in teaching a job vary widely among individuals. The trainer must recognize and make allowances for individual differences.)

5. TRANSFER OF TRAINING

(a) The amount of transfer from one situation to a second situation depends on the number of common identical elements in the two situations. (The individual must recognize these elements that are common in the two situations.)

(Specific learnings on one job will be used on a new job only when the learner recognizes them as the same task and knows how to apply them on the new job. Application of principles practices in a specific job to several jobs aids the learner in transferring learning from one job to another.)

(b) Training in specific abilities must be provided to insure learning of the desired specific abilities.

(The Application Step is necessary.)

6. TYPES OF RESPONSES:

Every Situation results in Three Types of Responses:

Primary learning: The specific thing learned.

(The job taught the learner is primary learning to him.)

Associate learning: Association of the learned specific with other specifics previously required.

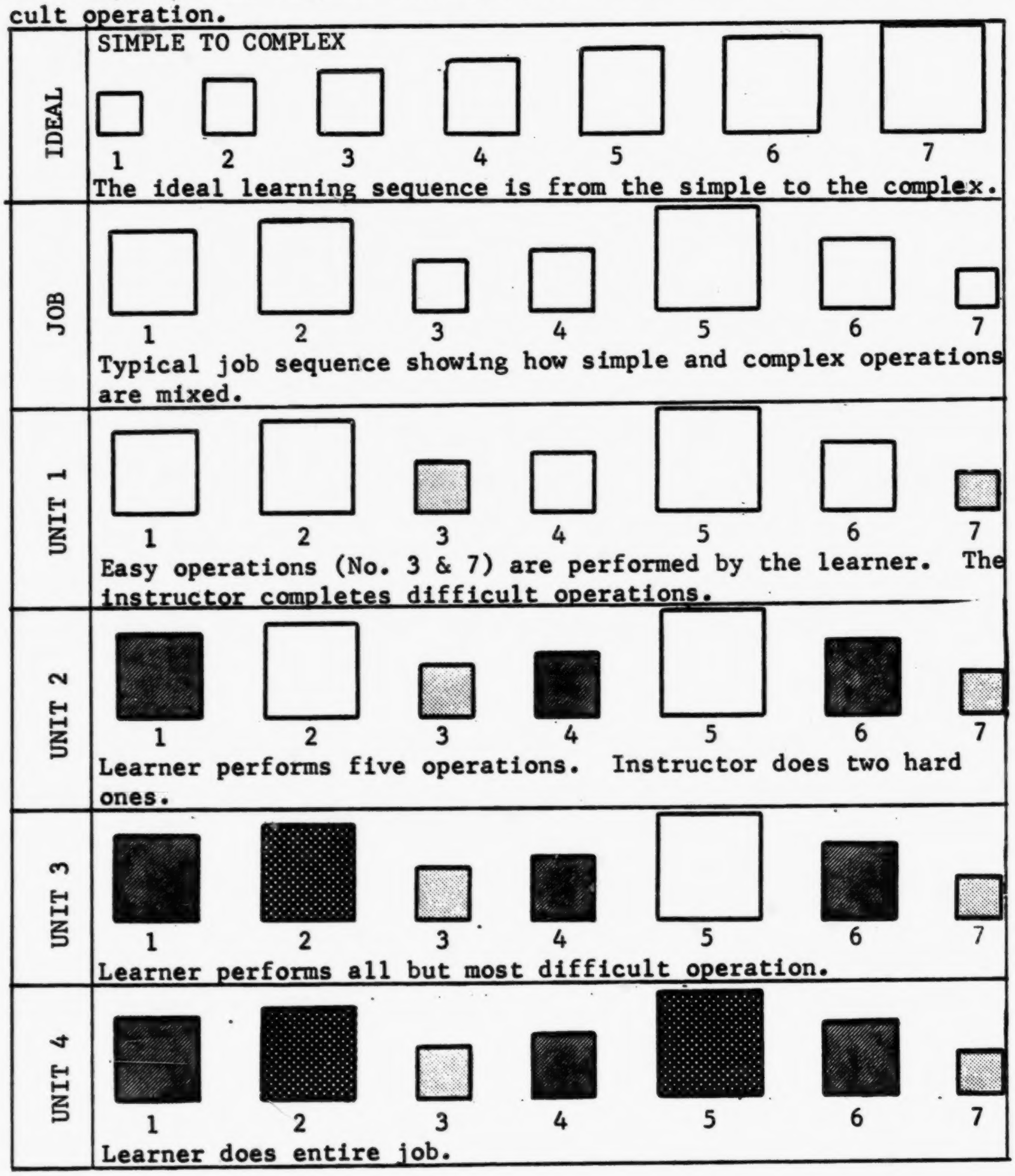
(The "Four Steps" when learned and applied in several different training situations tend to become steps to be used in all training situations.)

Concomitants: The attitudes, appreciations, and ideals that are developed by the learner.

(Neat performance of various skilled tasks tends to produce an appreciation of neatness in the performance of any job.)

The Ideal Learning Process

Many jobs have difficult and simple operations and steps scattered throughout without regard to learning difficulty. Simple operations should be taught first, with the instructor or a skilled worker doing the difficult operations. Through a series of organized teaching situations set forth below, we see how to progress from the simple to the complex regardless of the location of the difficult operation.



The ideal learning sequence is from the simple to the complex.

Typical job sequence showing how simple and complex operations are mixed.

Easy operations (No. 3 & 7) are performed by the learner. The instructor completes difficult operations.

Learner performs five operations. Instructor does two hard ones.

Learner performs all but most difficult operation.

Learner does entire job.

PRINCIPLES OF LEARNING

I. WE LEARN BEST WHEN THERE IS A NEED FOR LEARNING.

We want to know why we are doing things. We want reasons, explanations, connections and correlations. The instructor must recognize this and be prepared to seize and make best use of the learner's natural inquisitiveness, or be prepared to create curiosity and need for learning.

The range of needs for knowing is great. The need might be an immediate one such as needing to learn one step in order to go on to the next one, or it may be a more distant need such as earning a diploma or obtaining employment. It may be intrinsic or extrinsic and stimulated by the instructor. The instructor should always include good, sound objectives for learning skill or knowledge. If there are no reasons, or only weak reasons, then perhaps the instructor should re-evaluate his material and revise it, omitting the non-essentials.

A carpenter can build a house only as well and as rapidly as his tools and knowledge permit him. He cannot use tools he does not own or knowledge he does not possess. A learner can only learn with the equipment he has. His equipment consists of a certain amount of manual dexterity, previous education, limited experience, and whatever natural aptitudes and abilities he may possess.

II. WE LEARN BEST NEW THINGS IN TERMS OF THE OLD.

The instructor must speak their language so that they can easily understand the things being taught. The instructor can, by analogy, comparison, example, association, application to practical uses, and connections with things known, use the past experiences of his learners to teach the new ones. The instructor adds to the learner's education, being careful to start at the learner's level. There is little sense in assuming what we think the learner should know. To be effective, and in the long run economical, we must deal in terms of what the learner already knows in order to teach him what he should know.

III. WE LEARN BEST BY DOING.

The learner must take part in the learning and teaching process. The learner is not a person who listens and absorbs only, but a person who takes an active part in the lesson. To the instructor, this means that he does not stop at telling or showing how to do the thing being taught, but having satisfied himself that the learner is ready, encourages and permits the learner to do it. To hear about something is good: to see the thing is better; to do the thing is best of all. "We learn by doing" means that the learner must do something about the thing being taught, if he is going to learn it well.

"LEARNING STARTS WITH WHAT THE LEARNER KNOWS, NOT WITH WHAT THE INSTRUCTOR KNOWS." TEACHING IS HELPING OTHERS TO LEARN.

CHOOSE THE BEST METHOD

METHOD	USE IT	DON'T USE IT
DEMONSTRATION	To show steps. To clarify principles. To show use of equipment.	When note taking is required. In place of practice.
ILLUSTRATION	To show hidden features. As a substitute for demonstration where cost, or other factors, indicates desirability.	If a demonstration could be as easily given. Without practice if skill is to be developed.
QUESTIONS AND ANSWERS (DISCUSSION)	To warm up or review. To promote understanding. To give reasons. To emphasize factual material.	To fill in time. Without good leader. To present new material. In place of practice.
PRACTICE AND DRILL	To develop skill. To help in retaining information.	On a theoretical problem, but only on a real one.
CONFERENCE	To get opinions and ideas. To get benefit of previous experience. To modify opinions. To develop understanding. To get acceptance.	Unless people are already informed about subject. As initial training.
LECTURE	When presenting informational material. Supplemented by visual aids.	For material with many details. For training in a skill.
READING	Sparingly to emphasize exact wording. As an aid rather than a basic method.	As the basic method for conducting a meeting.

PREPARATION FOR TEACHING

Six Basic Needs

1. Competence in the subject being taught
2. Mastery of the techniques of instruction
3. Resourcefulness and creativeness
4. The habit of evaluation
5. The desire to teach
6. Ability to develop good personal relationships

OTHER CHARACTERISTICS

1. Your relationship with your students
2. Rewards for being an instructor

THE TEACHING JOB

Teaching in its simplest term is helping others to learn. It may be helping him to learn to do something or understand something.

When has a person learned?

1. When he can do something he could not do before.
2. When he understands something he did not understand before.

We may add that a person has learned when his feelings, attitudes, or ideas about something have changed.

When has the instructor taught?

1. When he has caused the learner to be able to do something he could not do before, understand something he did not understand before, or caused him to change his feelings, attitudes or ideas about something. Unless one or more of these things has taken place, the instructor has not taught.

We may set up this slogan or motto then for the instructor.

IF THE LEARNER HASN'T LEARNED,
THE INSTRUCTOR HASN'T TAUGHT

The nature of learning.

Learning is using the mind. The instructor cannot do this for the learner. It is not a matter of transferring what the instructor knows and can do into the minds and hands of the learner. Something must happen within the learner. He must pass through some active experience which will change his way of thinking and acting. Learning is active and not passive.

It is the business of the instructor to plan the experience of learner that will lead as quickly and directly as possible to the mastery of the desired skills and understandings, and to guide him through these experiences for the most effective results.

It should be remembered that what the instructor says and does is important only as it affects what the learner can do and what he knows.

It is possible for the instructor to put out a great deal of effort and still not be teaching. It is only when these tools together with other tools or methods of instruction are combined and used properly that effective results are obtained in this job of teaching. It is the purpose of this course to assist instructors in doing this.

STEPS IN GOOD INSTRUCTION

1. MAKE DETAILED PREPARATION
    - (a) Have all necessary equipment ready before the class starts.
    - (b) Use a "lesson plan."
    - (c) Have a clear and specific purpose for your lesson.
    - (d) Have a list of materials needed.
    - (e) Have a teaching routine outline that shows the order in which units are to be taught.
    - (f) Plan beforehand when and how instructional aids are to be used.
    - (g) Make plans beforehand for practice periods (drill).
    - (h) Know the level of skill expected of students by the end of the session.
    - (i) Provide for a summary and review at the end of the lesson.

2. MAKE AN EFFECTIVE PRESENTATION THROUGH EXPLANATION
    - (a) Make the fullest possible use of instructional aids (models, charts, and films).
    - (b) Make your own instructional aids when they are not available.
    - (c) Tie up the aid with teaching and do not use it as a substitute for teaching.

3. MAKE AN EFFECTIVE PRESENTATION THROUGH DEMONSTRATION
    - (a) First, show the whole operation briefly.
    - (b) Then, show it one step at a time.
    - (c) Always explain what you are doing while demonstrating.
    - (d) Always explain why you are doing it as you are.
    - (e) Have in mind a clear-cut, step-by-step break-down of the operation.
    - (f) Go slowly so that all steps of the operation can be clearly seen and understood by the students.
    - (g) Emphasize "key points."
    - (h) Demonstrate exactly how you want the job done.
    - (i) Repeat the operation as a whole and step-by-step.

4. MAKE AN EFFECTIVE PRESENTATION THROUGH QUESTIONING
    - (a) Make the questions friendly.
    - (b) Use questions to check the progress of students and to guide your own teaching.
    - (c) Ask questions before indicating the person to answer them.

5. HAVE THE STUDENTS TRY OUT THE SKILLS THEY HAVE LEARNED
    - (a) Make certain that the students perform the correct way during early practice.

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   - (b) Stay with the students after correcting them long enough to make sure that the right way has "taken hold."
   - (c) Emphasize accuracy rather than speed during early practice.
   - (d) Have the students become familiar with complex operations one step at a time.
   - (e) Have students explain their performance during early practice.

6. FOLLOW THROUGH TO CHECK ON THE SKILLS STUDENTS HAVE LEARNED
   - (a) Often check the students' performance to see that they do not develop bad habits.
   - (b) See that they do not "level off" too soon in their improvements.
   - (c) Make certain that they develop the best knacks and fine points of the job.

THE SENSES THROUGH WHICH WE LEARN

SIGHT - We acquire most of our knowledge through the sense of sight. Observation of action and the study of drawings, diagrams, models, and pictures are indispensable.

HEARING - Through hearing we are able to learn from experiences of others. It enables us to receive instructions and recognize proper operation of tools, machines, etc.

TOUCH - Through the sense of touch we become aware of quality and texture of materials, degree of roughness or smoothness, heat and cold, and, to some degree, the shapes of objects.

KINESTHESIA - Kinesthesia is a sense which enables us to determine direction and amount of muscular movement and gauge muscular effort.

SMELL - The sense of smell is important, to a limited extent, in several trades, chiefly in recognizing materials, chemicals, and the like.

TASTE - The sense of taste is perhaps the least-used of all the senses. It is important in trades in which foods and drugs are processed.

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The FOUR STEP LESSON

Step I: Prepare the Worker

Put him at ease.

State the job and find out what he already knows about it.

Get him interested in learning job.

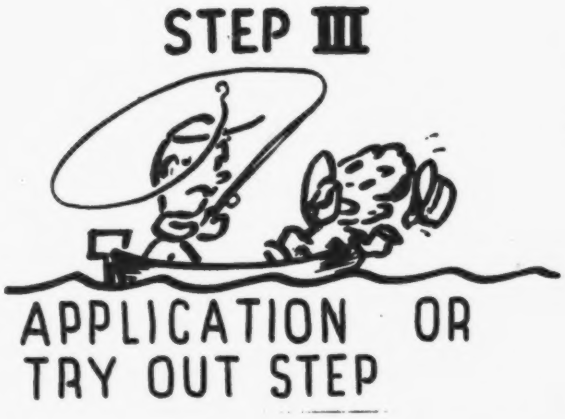
Place in correct position.

Step II: Present the Operation

Demonstrate and explain one IMPORTANT STEP at a time.

Stress each KEY POINT.

Instruct clearly, completely, and patiently, but no more than he can master.



Step III: Try Out Performance

Have him do the job--correct errors.

Have him explain each KEY POINT to you as he does the job again.

Make sure he understands.

Continue until YOU know HE knows.

Step IV: Follow-Up or Test

Put him on his own. Designate to whom he goes for help.

Check frequently. Encourage questions.

Taper off extra coaching and close follow-up.

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THE CHECKLIST
PRINCIPLES OF GOOD INSTRUCTION

1. KNOW YOUR SUBJECT
    - (a) Know your work well enough to gain the students' confidence.
    - (b) Keep up-to-date on newest developments.
    - (c) Know which material is most difficult for students.

2. KNOW YOUR STUDENTS
    - (a) Find out as much about them as you can before the class starts.
    - (b) Know how your material fits in with their experience, needs, and interests.

3. BE PREPARED
    - (a) Know exactly what you are going to cover.
    - (b) Know how and in what order you intend to teach your material.

4. AROUSE AND MAINTAIN INTEREST
    - (a) Show enthusiasm for your subject.
    - (b) Use frequent questions.
    - (c) Make your teaching personal.
    - (d) Use showmanship (i.e., variety and unusual methods of presentation).
    - (e) Tell stories and actual experiences.

5. MOTIVATE THE LEARNERS
    - (a) Make them want to learn.
    - (b) Show them why the things you teach are important.
    - (c) Show them the future need and use of what they learn.

6. FOLLOW A CLEAR-CUT ORGANIZATION
    - (a) Give a preview at the beginning of each lesson.
    - (b) Present ideas one at a time in a logical step-by-step order.
    - (c) Keep together topics that are related.
    - (d) Use summaries at various points in the discussion and at the end of the lesson.
    - (e) Briefly outline the content of the following lesson at the end of each session.

7. KEEP THINGS SIMPLE
    - (a) Use simple words and short sentences.
    - (b) Introduce technical terms gradually and explain what they mean.
    - (c) Tie the material up with everyday experience and use familiar examples.

8. PACE YOUR PRESENTATION PROPERLY
    (a) Go slowly enough for the students to understand the material.
    (b) Change the pace according to the difficulty of the material.

9. USE EMPHASIS
    (a) Repeat for emphasis.
    (b) Use questions to make important points stand out.
    (c) Use the voice to give emphasis (such as pausing before and after all important points, increasing volume, and taling slowly.

10. USE HUMOR OCCASIONALLY
    (a) Enliven your teaching from time to time with humor.
    (b) Choose humorous stories or comments that add to the interest of the lesson.

11. MAKE EFFECTIVE USE OF YOUR VOICE
    (a) Speak clearly.
    (b) Pronounce all words correctly.
    (c) Speak loudly enough.
    (d) Speak slowly enough.
    (e) Vary the sound of your voice to avoid monotony.
    (f) Speak with authority and confidence.
    (g) Direct your voice at the class rather than to the blackboard or equipment.
    (h) Avoid speech mannerisms (such as "uh, uh..." and, "now, uh...").

STAGES OF INSTRUCTION

1. PREPARATION

   a. Analyze subject material
   b. Determine learning objectives
   c. Organize the lesson
   d. Make complete lesson plan
   e. Rehearse the lesson

2. PRESENTATION

   a. Introduction (Orientation)
      (1) Objectives (What)
      (2) Requirements (How Well), (How Much)
      (3) Motivation (Why)
   b. Explanation (Tell)
   c. Demonstration (Show)
   d. Summary

3. APPLICATION

   a. Thinking, talking, writing, doing
   b. Use individual or group performance
   c. Supervise closely
   d. Remember men learn by doing

4. EXAMINATION

   a. Did they learn - Oral, written, performance, and observing application
   b. Planned exercises, problems, and questions

5. DISCUSSION, SUMMARY AND CRITIQUE

   a. Re-emphasize key points
   b. Strengthen weak points
   c. Plan specific questions, answer student questions
   d. Summarize

HOW TO INSTRUCT

There are four well-recognized steps that should be taken into account when planning and teaching. These steps have been broken down into several points that will strengthen your work as a teacher.

First, here is what to do to get ready to teach:

a) Decide what the learner must be taught in order to do the job efficiently, safely, economically, and intelligently.
b) Have the right tools, equipment, supplies, material, and aids ready.
c) Have the work place properly arranged, just as the worker will be expected to keep it.

Then you should instruct the learner, using the following basic steps:

THE FOUR STEPS

STEP I - PREPARATION OF THE LEARNER

a) Put the learner at ease.
b) Find out what he already knows about the subject.
c) Get him interested in learning.

STEP II - PRESENTATION OF THE OPERATION OR KNOWLEDGE

a) Tell, show, illustrate, and question in order to put over the new knowledge or operation.
b) Instruct slowly, clearly, completely, and patiently one point at a time.
c) Check, question, and repeat.
d) Make sure the learner really learns.

STEP III - THE PERFORMANCE TRYOUT (OR APPLICATION)

a) Test the learner by having him perform the operation.
b) Ask questions beginning with why? how? who? when? where? or what?
c) Observe performance, correct errors, and repeat instructions if necessary.
d) Continue until you know he knows.

STEP IV - THE FOLLOW-UP (OR TEST)

a) Put him on his own.
b) Check frequently and be sure he follows instructions.
c) Taper off extra supervision and close follow-up until he is qualified to work with normal supervision.

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MULTI-MEANING AND PROBLEM WORDS

= Problem Words
* = Multi-Meaning Words

#**about
*act
*after
#**all
#always
# America
#American
#and
#any
#anybody
#anyone
#anything
#anyway
*around
#**art
*as
*at

*back
#bad
*ball
*bank
*beat
*bed
*behind
#believe
#best
*bill
*bit
*black
*blind
*board
*body
*book
*box
*break
*broke
*broken
*brush
*burn
#business
*by

*call
*came
*camp
*can
*carry
*case
*catch
*center
*change
*charge
*check
*class
*clean
*clear
*close
*color
*come
*cool
*corner
#could
*count
#country
*course
*court
*cover
*cream
*cry
*cup
*cut

#daily
*dance
*dark
*dead
*deal
*deep
*did
#dinner
*direct
*do
*does
*done
*down
*draw
*dress
*drew
*drive
*drop
*drove
#**dry
#each
*easy
*even
#ever
#every
#everybody
#everything
#eye

*face
#**fair
*fall
*fast
*fat
*father
*feel
*fell
*fellow
*felt
#few
*field
*figure
*find
*fine
*fire
*fit
*flat
*fly
*follow
*foot
*for
*form
*found
*free
*fresh
*front
*full

*gather
*general
#**get
*give
*given
#**go
*goes
*gone
*good
*got
#government
*green
*ground
*guard

*had
*hand
*hard
*has
#**have
*head
#hear
#heard
*heart
*heat
*heavy
*held
*help
*high
*hit
*hold
*home
*horse
*house
*hung

*ice
*in
*iron
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*job
*jump
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*kept
*kill
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*laid
*land
#**law
*lay
*lead
*leave
*led
#less
*let
*letter
*life
*lift
*light
#**like
*line
*list
*live
*lose
*lost
*lot
*love
*low

*made
#**make
*march
*mark
*match
*matter
*mean
*meet
*met
#might
*mind
*mine
#more
#most
*mother
*move
#much

*name
#**near
#never
*new

*nice
#nobody
#none
*nose
*note
#nothing
#*now
*number
*nurse

*of
*off
*old
*on
*one
#only
*open
#or
*order
*out
*outside
*over
#own

*pack
*paid
*paper
*part
*pass
*past
*pay
#people
*pick
*piece
*place
*plain
*plane
*plant
*play
*pocket
*point
#poor
#possible
*post
*pound
*power
*present
*print
#public
*pull
*push
#*put

#quite
*quickly

*race
*raise
*ran
*reach
#*read
*receive
*record
*repeat
*report
*rest
*return
*ride
*right
*ring
*rise
*rock
*roll
*rose
*around
*rule
*run
*rush

*salt
*sat
*save
#*saw
*school
*season
*seat
*second
#*see
#*seen
*serve
#*service
*set
*settle
#several
*shade
*shallow
*shape
*ship
*shook
*short
*shot
#should
*show
*sick
*side
*sight
#*sign
*simple
*sing
*single
*sit
*skin
*slip
*slow
*small
*smart
*smoke
*so
*soft
*some
#something
*sound
*space
*speak
*spirit
*spoke
*sport
*spread
*spring
*square
*stage
*stand
*star
*start
*state
*stay
*step
*stick
*still
*stir
*stock
*stool
*stop
*strange
*scratch
*strong
*study
*stuff
*subject
#such
*suit
#supper
#sure

*table
*take
*taken
*talk
*taste
*tear
*tell
*term
#*that
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#these
*thick
*thin
#this
#those
*tie
*time
*to
#today
*told
*tone
#too
*took
*top
*touch
#town
*train
*tree
*tried
#*trip
*true
*trust
*try
*turn

*under
*up
*use

*voice

*walk
*warm
*wash
*watch
*water
*wave
*way
*wear
*well
*went
#*where
*white
#who
*wide
*wild
*will
*wind
*with
*wood
*word
*work

*you

HOW TO GET READY
TO INSTRUCT

Have a Timetable

Include how much skill you expect him to have and by what date.

Break Down the Job

List important steps.
Pick out key points. (Safety is always a key point.)

Have Everything Ready

Have the right equipment, materials, and supplies.

Have the Workplace Properly Arranged

Arrange workplace just as the worker will be expected to keep it.

Assignment Sheet
in
OCCUPATIONAL INSTRUCTION

SUBJECT: What the Instructor Can Do To Help the Learner

AIM: To develop an understanding of how the instructor can make learning easier and more effective.

INTRODUCTORY INFORMATION: Each of the six recommendations covered in this lesson is based on actual observations about the learning process made by capable instructors in training situations. Even though you could just memorize the list, you will probably use them oftener and more intelligently if you know why each recommendation aids learning. This assignment will help you develop that understanding.

QUESTIONS OR PROBLEMS: Provided below are two lists. The first list tells some observations that have been made about how people learn better. The second list is of the six recommendations this lesson covered that will help you teach better. In the blank space following each recommendation, place the number of the observation on learning which explains why that recommendation is important.

Some observations about learning:

1. We learn best when there is a need for learning.
2. We learn best new things in terms of old.
3. We learn best by doing.
4. We learn best if we can expect and experience success.
5. The more we do a thing, the better we are able to do it and the more we enjoy doing it.

Some recommendations for teaching:

1. Motivate the learner, keep him interested.______________
2. Teach from the known to the unknown.______________
3. Tie knowledge and skill together.______________
4. Proceed from simple to complex, easy to difficult.______
5. Reward success.______________
6. Provide practice and repetition.______________

TEACHING METHODS

LECTURE (TELLING)

The lecture is the most used (and most abused) of all classroom procedures. In itself, it is so ineffective in presenting information that it hardly rates being considered as a separate method of teaching. It is best used in combination with other methods and is a valuable "tool" of the teacher who recognizes and appreciates its merits and limitations.

"Telling is not teaching; listening is not learning."

USE IT

- --to introduce a new topic.
- --to create interest in the lesson to be taught.
- --to describe an experience.
- --to summarize a lesson.
- --to explain key points as you demonstrate.
- --to supplement other methods.

DON'T USE IT

- --to describe manipulative processes.
- --to explain highly technical subject matter.
- --to describe complex objects.

LECTURES CAN BE IMPROVED BY

- --good voice, posture, delivery, and a certain amount of "showmanship."
- --spelling technical and unfamiliar words on the blackboard.
- --simple analogies, everyday comparisons, and blackboard sketches.
- --concise, simple definitions.
- --frequent repetition of difficult ideas.

REMEMBER

- --that lecture, used exclusively, is the tool of the lazy teacher.
- --that if your students haven't understood you, you didn't make yourself clear.

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TEACHING METHODS

DEMONSTRATION

In a shop demonstration, the instructor--using real tools, machines, and materials--shows the learner what he is supposed to do by actually performing the skill or operation and explaining what he is doing and why. Included in the explanation are key points and cautions as they are needed. In a so-called laboratory demonstration, the instructor demonstrates--with apparatus--a natural law or phenomenon to a group of students.

A demonstration can be made to an individual or to a small group.

USE IT

--to show a learner how to do an operation.

--to show how a piece of machinery or equipment operates.

--to clarify a principle or theory.

DON'T USE IT

--as the sole means of teaching a lesson.

--when note taking is required.

--in the place of practice.

DEMONSTRATIONS CAN BE IMPROVED BY

--setting up and rehearsing in advance.

--limiting a group demonstration to a few individuals.

--arranging students so that all can see the work from the same position as they will normally be working.

--performing operations at normal speed first, then repeating at slow speed.

--the use of questions as the demonstration advances.

REMEMBER

--to explain the why of each step as well as key points and cautions.

--to demonstrate your own craftsmanship; be thorough; never do a "sloppy" job before your students.

--that the students must be given a chance to "try-out" following a demonstration.

TEACHING METHODS

ILLUSTRATION

Illustration is the act of making anything more easily understood by use of explanations, examples, and representations. Illustration may be accomplished through the use of many techniques, but from the standpoint of the trade teacher, representations of various things is perhaps the most important. Representations may be (1) graphic (drawn, painted, printed, photographed), or (2) real (models, mock-ups, displays). The use of illustrative materials in teaching must include oral or written explanations to be effective.

An illustration is often better than the real thing.

USE IT

--as a substitute for the real thing when time, cost, and availability are important factors.

--as a substitute for the real thing to bring out hidden features.

--to simplify a complex mechanical, hydraulic, or electrical principle.

DON'T USE IT

--if the real object is better

--if a demonstration can be given easily.

ILLUSTRATIONS CAN BE IMPROVED BY

--adequate oral or written explanations.

--use at the most appropriate time.

--the use of color (if the identification of different parts is important).

REMEMBER

--that drawings are frequently more intelligible than the real thing.

--that the visual method is the most efficient method of presenting new information.

--that in addition to being teaching aids, illustrative materials add color and interest to a shop or classroom.

--that the blackboard is the most used medium of illustrating--try to improve your blackboard "technique."

TEACHING METHODS

DISCUSSION

The discussion method provides opportunities for the instructor to review, repeat, and clarify information or ideas and to stimulate thinking on the part of the learners. Its uses in teaching are many and varied, but the usual uses are for the instructor to secure oral comments from the learners, to encourage questions and answers, and to permit active participation on the part of the class members.

The success of a discussion largely depends upon the skill of the instructor.

USE IT

- --at the beginning of a lesson to stimulate interest
- --to stimulate student participation
- --to clarify ideas
- --to promote common understanding of a subject or problem
- --to modify opinions and attitudes
- --at the end of a lesson to summarize or review

DON'T USE IT

- --to present new information
- --with immature or "green" students

DISCUSSIONS CAN BE IMPROVED BY

- --planning the main topics to be covered
- --listing and organizing ideas on blackboard
- --participation of the entire group
- --keeping the discussion period short

REMEMBER

- --that the instructor must not dominate the discussion
- --that the effectiveness of any discussion depends largely upon the skill of the instructor
- --that each group member must have some previous knowledge of the subject

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DIRECTED ACTIVITY

Everyone knows "we learn to do by doing." But merely doing things without the direction and guidance of an experienced person and without a definite purpose in mind, has little educational value. Student activities may be guided and directed through use of written lesson assignments, job sheets, workbooks, projects, experiments, supervised drill or practice, and the like.

READY?
ONE
TWO!

An activity should have a definite purpose.

USE IT

-- to supplement other methods of instruction.

-- to save time in teaching.

-- to boost the slow student.

-- to enrich the instruction of the advanced student.

-- to create and maintain student interest.

DON'T USE IT

-- without your personal supervision.

-- as a substitute for other methods of teaching.

DIRECTED ACTIVITIES CAN BE IMPROVED BY

-- clear and adequate directions or procedures.

-- adequate references (if needed).

REMEMBER

-- that no teaching aids--however good--can take the place of the teacher.

--that the most effective means of adjusting instruction to meet the needs of a group of students whose interests, background and abilities differ, is through individual lesson assignments.

--that any type of class which does not provide for student activity tends to become boring.

ORAL QUESTIONS

A list of prepared questions (or catechism) to be answered by students as a teaching procedure is an out-moded technique of teaching. However, like the lecture, questions are a valuable aid to the teacher if used judiciously and in conjunction with other teaching methods and techniques. In general, questions should stimulate thinking and reasoning rather than test the students' ability to repeat memorized bits of factual information.

USE THEM

- --to "warm-up" the group.
- --to encourage student participation.
- --to clarify understanding.
- --to spot-check the effectiveness of your instruction.
- --to maintain attention of the class.
- --to review material taught.

State the question clearly to prevent misunderstanding.

DON'T USE THEM

- --in lieu of real teaching.
- --to fill in class time.
- --in a fixed order (as from a class roll).
- --as a grading or testing technique.

QUESTIONS CAN BE IMPROVED BY

- --limiting them to a single
- --stating them clearly and simply.

REMEMBER

- --to direct the question to the entire group first--then call on a person to answer.
- --to use frequently questions beginning with why? when? what? and how? to make a student justify or explain his answer to a question.'
- --that frequently a student may be caused to answer his own question by use of "counter-questions" from the instructor.
- --that many questions asked the instructor may be returned to the group for an answer.

ORAL QUESTIONING

To become a successful instructor, you must master the art of questioning. Questions such as these. . .

WHY do we do it? WHAT is its purpose? WHERE should it be done?

WHEN should it be done? WHO should do it? HOW should it be done?

WHICH is better?

. . . are among the occupational teacher's most effective tools. He should learn to use them and keep them sharp. (Not all questions are followed by a question mark. Some begin with commands such as "Define" or "Summarize.")

QUESTIONS HELP THE INSTRUCTOR:

1. Motivate the group; get it interested in the lesson.
2. Find out what learners already know.
3. Encourage active participation by learners.
4. Spot-check effectiveness of the instruction.
5. Clarify a point that a student has not understood.
6. Stress important points.
7. Keep attention of the group and reclaim attention of the person whose mind has wandered.
8. Review material originally presented in another way, for variety.

TO BE EFFECTIVE, QUESTIONS:

1. Should be worded so that learner cannot answer unless he really knows. All questions should require thought. This rules out most questions which can be answered "yes" or "no."
2. Should be brief and easily understood. If it is apparent that learner does not understand a question, rephrase it immediately in words which will be understood.
3. Should be limited to one main thought. Avoid asking several questions in one breath or linking questions together with "and."
4. Must have a specific purpose that is related directly to the subject being discussed.

WHEN ASKING QUESTION, first state the question to the entire group. This procedure gets everyone thinking. Then pause for a moment to give them time to think. Finally call the name of one trainee for the answer. (If he had been called by name before the question was asked, others might not have listened.) Do not use a routine for selecting the person to answer.

QUESTIONS

WHY - do we do it?
WHAT - is its purpose?
WHERE - should it be done (location)?
WHEN - should it be done (timing)?
WHO - should do it?
HOW - should it be done?
WHICH - is the better?

SOME KEY "QUESTION" WORDS

Analyze
Calculate
Clarify
Classify
Compare
Construct
Contrast
Criticize
Describe
Develop
Estimate
Evaluate
Explain
Figure
Give
Give the Answer
High-light
Indicate
Justify
List
List in Order
Make
Outline
Point Out
Select
Show the Relationship
Sketch
Tell
Trace
Work Out
Write in Sequence

A Check List of Your Oral Questioning Techniques

As you read the following questions, think of your most recent teaching experience. Allow yourself 5 per cent for each question that you can answer by saying Yes.

1. Did you avoid a "pattern" of calling on students in turn? ________
2. Did you always state the question before naming a student? ________
3. Did you draw out answers rather than tell them? ________
4. Did you avoid questions to be answered by "yes" or "no"? ________
5. Were your questions so clearly asked that students did not ask you to repeat any of them? ________
6. Did you echo the answers to important questions but avoid the practice of confirming every answer? ________
7. Were you always able to get satisfactory answers without rephrasing questions?
8. Did your questions reach beyond the textbook materials? ________
9. Was your questioning approach different from the one used in the preceding meeting of the same group? ________
10. Were your questions so phrased that there was no "give-away?" ________
11. Was each question preceded by a situation thoroughly understood as the basis for the problem involved? ________
12. Did your questions point up the important aspects of the lesson? ________
13. Was the general outline of questions planned in advance? ________
14. Were your questions clearly adapted to the ability and experience of the pupil or pupils for whom you intended them? ________
15. Did you give confidence-building questions to timid students? ________
16. Did you give students time to think before requiring answers? ________
17. Did you permit students time to answer without interruption? ________

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18. Did you occasionally commend students for good answers? __________

19. Did you make it possible for students to raise questions? __________

20. Did you make sure your questions taught, not tested? __________

COMPLIMENTING AND CORRECTING LEARNERS

A sincere compliment can help make learning more effective. Correction, on the other hand, can block progress if it is not done properly.

These suggestions will help the instructor handle both corrections and compliments:

1. Avoid criticism. Nobody likes to be criticized, and most men want to learn; therefore, avoid criticism in the sense of "bawling out" a man for having done something wrong. Instead, show him how he could have done it better.

2. Compliment before you correct. Always find something on which to compliment a man before you correct him. It will make him more receptive to your correction. Make sure the compliment is sincere.

3. Let the trainee correct himself. Criticism or correction is never a pleasant experience, but when the trainee is induced to correct himself, the factor of unpleasantness is almost entirely eliminated. First compliment, then ask the trainee if he can think of anything he could have done that would have made his performance even better. If he can't think of anything, you will have to make a suggestion.

4. Don't overdo correcting. Good instructors exercise restraint when correcting. They know that if they correct every little thing a man doesn't do quite right, they'll make him nervous, damage his self-confidence, and instead of being a help, their corrections will be harmful and annoying.

5. Don't correct in front of others. This, the worst kind of criticism, is embarrassing and demoralizing.

6. Don't be too quick to blame the trainee. If he doesn't do something right, the fault may lie in your method of teaching.

7. Encourage him. Compliments are an essential part of teaching. They encourage learning. Use judgment and do not overdo compliments. They can be spaced to serve as a steady support for the trainee's morale. There should be a good basis for all compliments, but a man doesn't have to do a perfect job to deserve a compliment. Improvement or progress, even though slight, is a basis for a sincere compliment.

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8. Be prompt with your compliments or corrections. Make them immediately following the trainee's performance. Don't do it an hour later or the next day. It is especially important to compliment a person at the end of the day--it sends him home with the feeling of success, makes him feel that you were of help and that working with you is worthwhile.

WHAT AN INSTRUCTOR NEEDS TO KNOW ABOUT INSTRUCTING

If you are going to help a person learn the skills, knowledge, and attitudes he needs to get and keep a job, you will need to know:

How adults learn.

How you can make them want to learn.

What you can do in your planning and teaching to help them learn more effectively.

How to manage a class and shop area so it will contribute to teaching, rather than make it difficult.

Where you can get assistance and advice.

If you are a first time teacher, it will be helpful to realize the differences between the production that you had as your goal in your regular occupation and the effective instruction which is your goal now as a teacher:

When You Produce	When You Instruct
1. Your interest is in the finished product.	1. Your interest is in the trainee; the produce is secondary.
2. You do the work.	2. The job is divided between the instructor and the trainee, depending on how rapidly the trainee is catching on.
3. You work on standard materials.	3. The trainee works on any material that serves the purpose.
4. You follow the most efficient way to produce.	4. You teach the steps in the way the trainee can best learn them.
5. Quality and quantity at minimum cost are the tests of proficiency.	5. Ability to perform is the test.

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EXAMPLE OF A SCORING SHEET:

PERFORMANCE TEST SCORE SHEET		
ELEMENT TESTED	MAXIMUM CREDIT	CREDIT GIVEN
Safety factors observed	10	
Good use of hand tools	10	
Good use of machine tools (precautions)	15	
Economical use of material	10	
Systematic procedure	15	
Accuracy to given dimensions of finished job	15	
General appearance of finished job	15	
Clean-up	10	
______________________ NAME OF TRAINEE	TOTAL MARK________	

This test scoring sheet is just an example; it lists some but not all of the elements that might be considered in other jobs. The elements of "safety or precautions observed" are always important, however.

A more complete scoring sheet might also list steps and key points to observe, as well as the actual standards in terms of speed, dimensions of finished object, and tolerances permitted.

WHEN GIVING A PERFORMANCE TEST:

1. Make certain the learner understands directions.
2. Make certain he understands what standards are acceptable.
3. Have working conditions, including conditions of tools and machinery, as nearly identical as possible for each person.
4. Evaluate each element as accurately and fairly as possible. For example, check time accurately when evaluating speed

of performance. Also, if physical measurements are important, use same measuring instrument that trainee used.

5. Avoid making trainee tense or giving assistance other than clarification of directions.

Assignment Sheet

for

METHODS OF INSTRUCTION

SUBJECT: Factors That Effect Learning

AIM: To develop an understanding of some factors that influence the learning process.

INTRODUCTORY INFORMATION: The information contained in this assignment provides a sound basis for training students for an occupation. It provides the basic information needed to develop a four-step plan of instruction and makes the learning process more enjoyable and meaningful to the learner.

REFERENCES: Information Sheet No. 103 "Some Factors That Affect The Learning Process"

PROBLEM: In the column to the right of each lesson plan step enter the number of the factor which is appropriate for that step.

EXAMPLE:

Item 8 applies to Step I.
Item 4 applies to Step II.

Items may apply or be appropriate to several of the Lesson Plan Steps.

SOME FACTORS THAT AFFECT THE LEARNING PROCESS

TEACHING IS A PROCESS IN WHICH:

The teacher plans, presents, tests, and helps learners to, understand information or develop skills.

The learner develops new knowledge, new attitudes, and new skills and is able to apply them to a trade situation.

Even though the learner will not learn unless he takes an active part, the instructor is primarily responsible for success. "If the learner hasn't learned, the instructor hasn't taught!"

1. One learns faster by seeing and hearing than by hearing alone.
2. One learns still faster when doing or saying is added to seeing and hearing.
3. Readiness. One learns a thing when he really wants to learn it and feels a need for it. One must be interested. Conditions must be right.
4. Effect. One must get satisfaction out of learning. Satisfaction comes from the success in learning the job at hand. The more certain of success, the greater the desire to learn.
5. Exercise. One likes to do over and over again those things they have learned to do well, so drill and practice become pleasure rather than drudgery. The more one does a thing, the better one is able to do it.
6. It is important to make frequent checks to see if individuals are learning, then reteach as needed, using varied approaches to get the job done.
7. If an instructor knows a learner's background, he may be able to discuss the lesson in terms the learner already understands.
8. Active learners need a chance to apply what they are learning.

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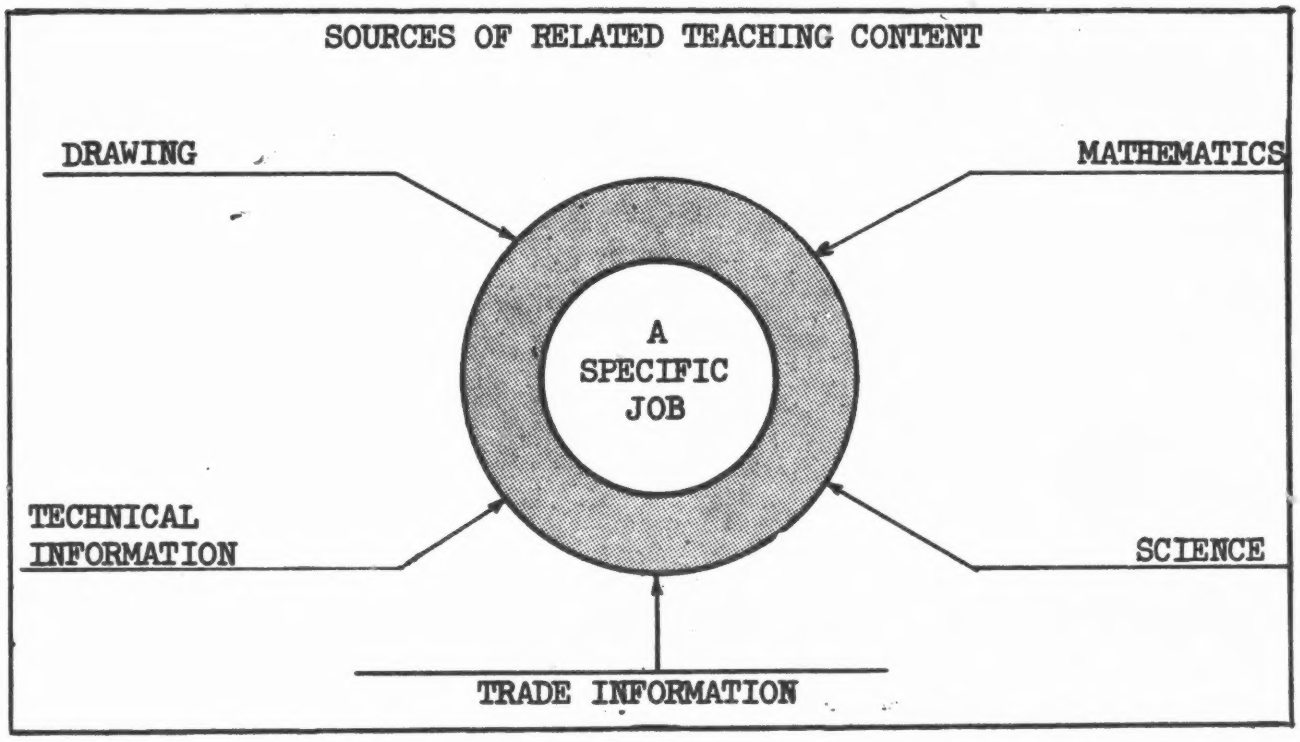
STEPS OF A LESSON PLAN	FACTORS THAT AFFECT LEARNING
STEP I. PREPARATION OF THE LEARNER a. Put the learner at ease. b. Find out what he already knows. c. Get him interested in learning.	
STEP II. PRESENTATION a. Tell, show, demonstrate, illustrate, and question in order to put over knowledge or skill. b. Instruct slowly, clearly, completely, and patiently one point at a time. c. Check, question, and repeat.	
STEP III. APPLICATION (PERFORMANCE TRYOUT) a. Have learner perform the operation. b. Ask questions beginning with "Why," "How," "Who," "When," "Where," or "What." c. Observe performance, correct errors, repeat instructions, if necessary. d. Continue until you know he knows.	
STEP IV. TEST (FOLLOW-UP) a. Test to determine if learner has learned. b. Put him on his own. c. Check frequently and be sure he follows instructions. Taper off extra supervision and close follow-up until he is qualified to work under normal supervision.	

WHAT TO TEACH

The instructor of apprentices, confronted with the question "What shall I teach?" will find an answer to that question in the chart shown below. Prior to going before a class, the instructor should "take apart" specific jobs apprentices are doing in the trade for teachable content or lesson material.



For Example:

Let us suppose that the specific job is to Lay Out a Rafter. The question the instructor should raise in his own mind as he plans his instruction is: "What science, mathematics, drawing, technical information, and orientation is involved in laying out a rafter?"

Taking a pencil and paper, he could develop a list which contains some or all of the following possible lessons or topics:

MATHEMATICS
Linear Measure
Common Fractions
Angular Measurements

SCIENCE
Weight Bearing Materials
Roof Load
Bracing To Take Specific Load

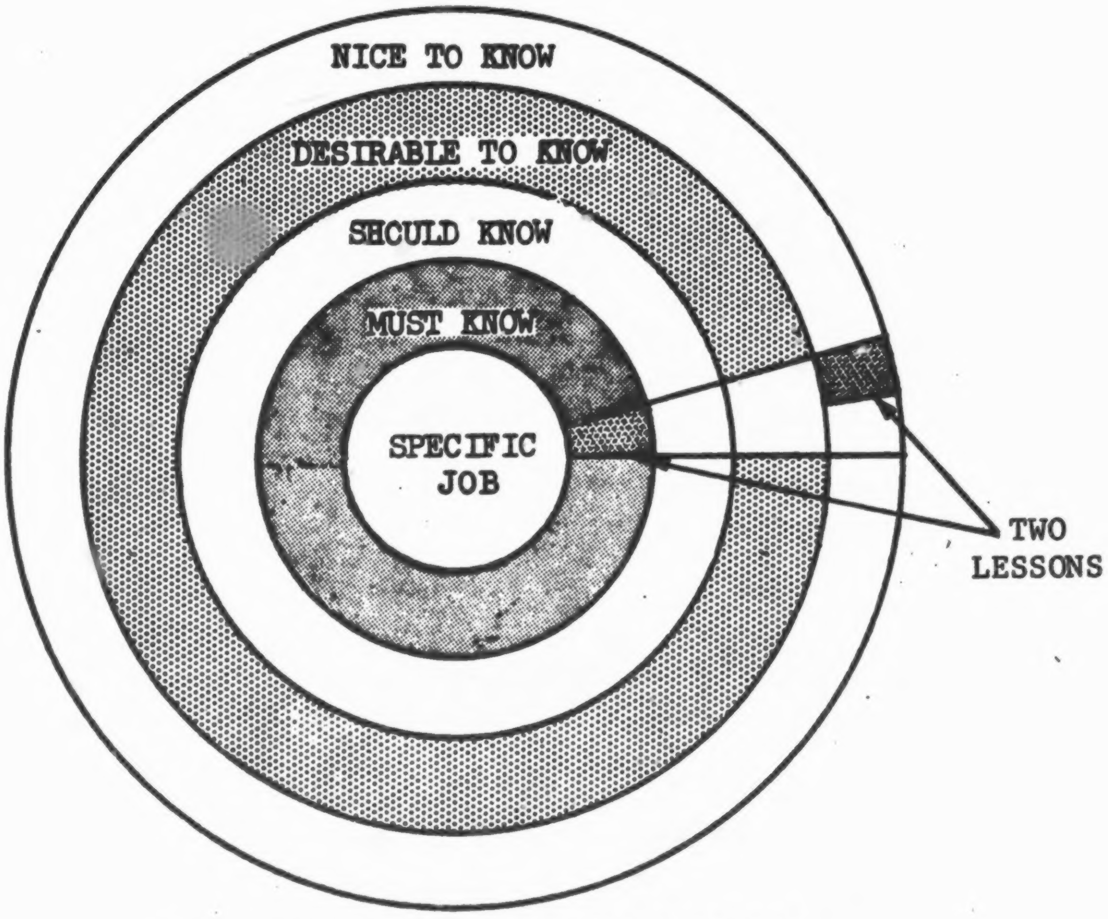
TRADE INFORMATION
Rules and Regulations of the Trade Covering Laying Out Rafters

DRAWING
Reading and Interpreting Working Drawings
Laying Out Rafters

TECHNICAL INFORMATION
Choosing Rafter Materials
Selection of Specific Boards
Checking Layout Against Blueprint

The Selection of Teaching Materials:

Lessons or topics might be placed in one of four categories: namely, "must know," "should know," "desirable to know," and "nice to know." Starting with the "must know" the instructor can plan lessons extending into the outer categories as far as time will permit. A graphic illustration of two lessons containing these elements is shown below.



TEACH "MUST KNOW" INFORMATION FIRST.

Since time is important to the student and the instructor, it is highly desirable to teach the "must know" information, followed closely by the "should know."

We learn by doing. Instructors working with students should keep this fact in mind and plan to have each lesson include some "doing" for his learners. Charts, diagrams, demonstrations, films, and other visual devices will help to enliven your related subjects classes.

EXAMPLE OF WHAT TO TEACH

The Sewing Machine and Its Relation to the JOB TARGET

Inexperienced instructors nearly always include too many teaching points in a lesson. Many of these teaching points are unnecessary, add nothing to the skill of the learner, slow up the learning process, and retard the whole training program.

To illustrate--a learner is to be taught how to use a sewing machine. This job should be broken up into four operations.

1. How to thread the machine
2. How to regulate the stitches
3. How to start and stop the machine
4. How to position the fabric for sewing

In order to use a machine correctly, the operator MUST KNOW how to start it, how to stop it; he MUST also KNOW how to position the fabric for sewing and how to thread the machine.

The operator SHOULD KNOW how to take care of a machine. He SHOULD also KNOW when it is out of adjustment.

It would be DESIRABLE TO KNOW the names of the machine parts, that the stitch regulator makes various numbers of stitches per inch; it would be DESIRABLE TO KNOW how to make adjustments when the machine stitches are faulty. This is an advantage but is not necessary.

It would be NICE TO KNOW who invented the machine, manufacturing processes, costs, etc.

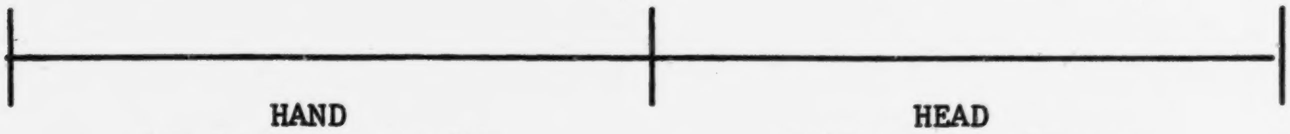
It is obvious that the items listed under MUST KNOW are necessary, that these items MUST be taught. (In order to do the job correctly, safely, or accurately, he MUST KNOW these particular things.)

The items listed under SHOULD KNOW are necessary, but often taken for granted, and not taught by the instructor.

The items listed under DESIRABLE TO KNOW are less important. The operator can use a machine with this knowledge. Most firms send machines to the representative for major repairs.

The items under NICE TO KNOW add nothing to the operator's skill as a workman, but they do permit him to talk more intelligently about machines. If these items are taught, they should be considered related lessons.

PRACTICE OR DRILL



The student learns by exercising a skill under your direction. It is learning by doing. Practice is at its best when students use real materials, real machines, and production methods.

The student learns by drill on essential information.

WHEN to use practice or drill

1. When the student is to learn a skill to point of becoming a habit.

2. When you want the student to remember essential information.

3. No choice of method--practice or drill is the only possible way.

HOW to use practice or drill

1. Tie up the new information or skill with old skills or experience.

2. Students' habits can best be formed by following these simple rules:

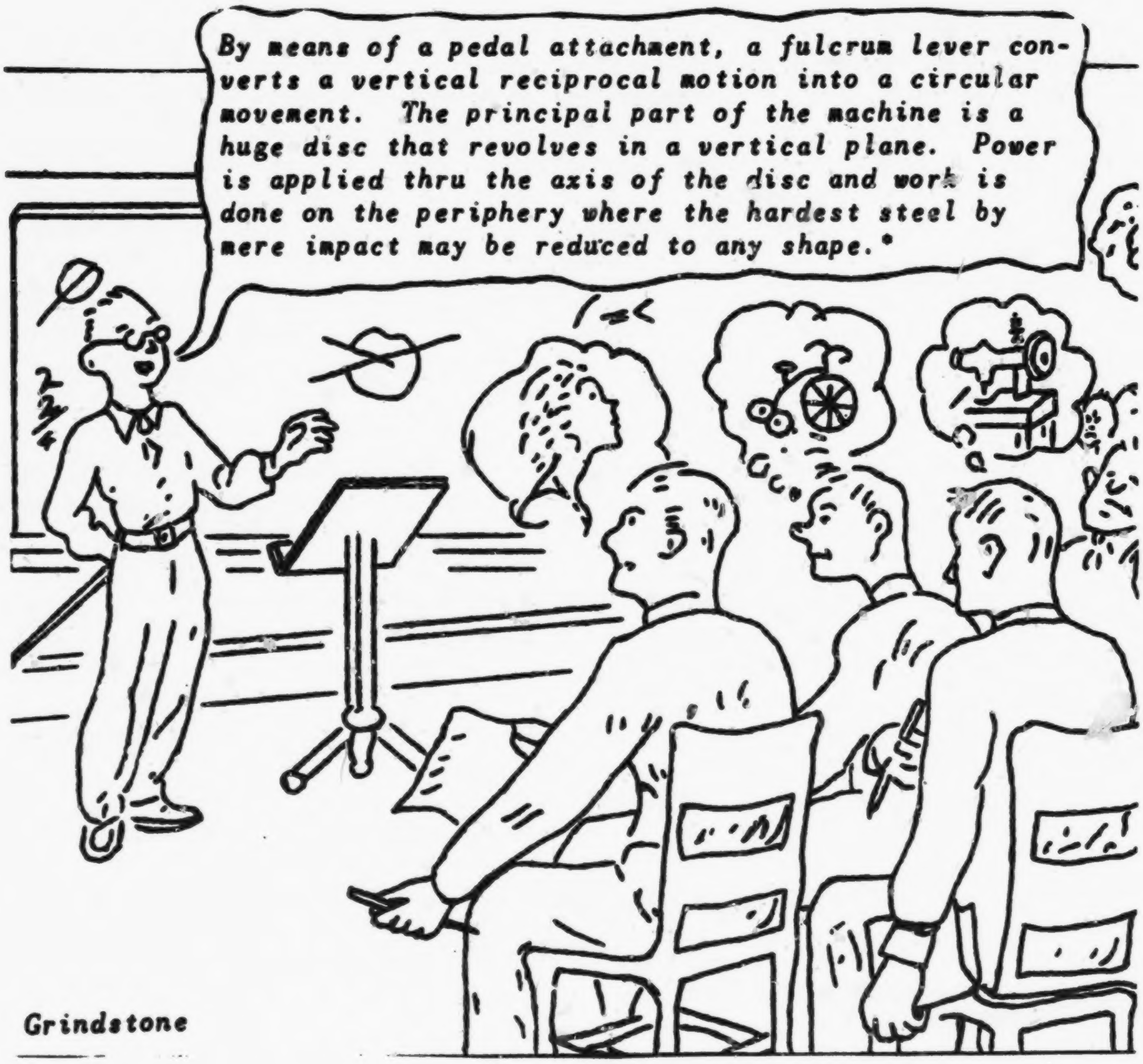
   a. Get students started doing the thing right.
   b. See to it that they do it always in the same way.
   c. Encourage them to think about it as they do it.
   d. Have them do it over and over at regular and frequent intervals.

3. To get students ready, arouse their interest.

4. Show them clearly what they must do or know.

5. Make the practice or drill as nearly as possible like the work that they will do.

3


By means of a pedal attachment, a fulcrum lever converts a vertical reciprocal motion into a circular movement. The principal part of the machine is a huge disc that revolves in a vertical plane. Power is applied thru the axis of the disc and work is done on the periphery where the hardest steel by mere impact may be reduced to any shape.*

Grindstone

Speak to your students in words they will understand. If you find it necessary to use a strange term or new nomenclature, be sure to:

1. Spell it on the blackboard.
2. Define it as simple as possible.
3. Draw them a picture, show them a chart, or let them see the real thing.
4. Make simple analogies and everyday comparisons.
5. Make them use the term frequently. Check them at regular intervals.

AVOID SESQUIPEDALIANISM

Remember:

If your students don't understand what you say, it is because you are unable to make yourself understood. In nine cases out of ten, if the student hasn't learned, it is because the instructor hasn't taught.

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THE JUDGEMENT FACTOR IN COMMUNICATION

Here are four names and four occupations. See if you can decide who does what.

Kelly

Piaget

Von Sprocken

Sen Ling

Scientist

Laundryman

Artist

Policeman

That was easy, was it not? What made it so easy to match up these names with the occupations? This type of mental association is called stereotyping.

Stereotyped notions come from many sources. Some may have an historical basis, some may have had their beginning in fiction. The origins of some of these associations are so obscure that they are lost to us today. They are carried on by the comic strips, works of fiction, television, stage and screen.

How dependable are these stereotyped concepts? Do they have any real effect on what we think and believe? These are pertinent questions because stereotyping is one of many factors that can, and often does influence our judgement.

Sound judgement is an essential ingredient to effective communication. Webster's Dictionary defines judgement in the sense we are using it, as "the operation of the mind, involving comparison and discrimination, by which knowledge of values and relations is mentally formulated." Also, judgement is "the power of arriving at a wise decision; discretion; discernment."

The goal of effective communication is mutual understanding. If we look up the word understanding in the dictionary, we will find that judgement and understanding can not be separated.

Two or more people can read or hear the same thing exactly, and yet each of them may understand it differently. Why is this true? It is true because each of us must take the information we receive and let it filter through what we have stored away in our minds before we understand it. Our judgement and understanding of any information is dependent on our relating this information to everything else we know or feel about the subject.

Stereotyped notions are just one of the factors that influence judgement. There are many others.

EDUCTIVE LISTENING

A Prescription for Improving Person-to-Person Communication

How much of your time do you spend in conversation with people? Probably you have never stopped to consider how many hours each week you spend talking and listening to others. Conversation, of course, is a form of person-to-person communication. Conversing with others can be an extremely effective means of communication if handled correctly.

Unfortunately, many people are not as skillful in this important method of communication as they need to be. All too often a discussion with someone else turns out to be a barrier to mutual understanding rather than an aid.

Perhaps a good part of the time when we are conversing with others we are just passing the time of day. Lack of real understanding in such situations may not be too critical. There are many occasions, however, when it is vitally important that our person-to-person communication be just as effective as possible.

A supervisor in discussing a grievance with an employee or listening to a suggestion can not afford to content himself with superficial understanding. A personnel manager in interviewing a prospective employee must accurately understand the person. An instructor cannot determine what sort of help a student needs unless their discussion constitutes effective communication. The doctor may be at a loss to diagnose the patient's complaint unless the patient correctly communicates to him the nature of the symptoms. Husbands and wives, parents and children all need to be able to converse with understanding.

There are two things that would go a long way toward helping us to know what a person really means when he talks to us:

1. If the other person always knew exactly what we needed for him to tell us.

2. If the other person always had the ability to express himself clearly, concisely, and accurately.

Obviously these two things are not always true. This is why better listening on our part may well be the best prescription for improving communication. There may not be much you can do about the communication faults of the other person. By improving your own listening skills, however, you can help make up for his deficiencies.

Curiously enough, we largely take for granted our ability to listen. We seem to feel that if we can hear, we can listen satisfactorily. On the other hand, we do not assume that just because a person can talk he can express himself effectively.

From the time a child starts to school, planned opportunities are provided to help him improve his skill in expressing himself. Show-and-tell periods in the first grade are designed to give the child experience in skillful expression. All through elementary school oral reports are required. In junior high or high school students may take courses in public speaking, and many colleges offer degrees with a major in speech. But, where along the way does a person get any formal training in listening? Just as surely as one must develop the ability to speak effectively, so must he develop the ability to listen effectively.

There are many occasions where the person talking to us either does not know what he needs to tell us, or he lacks skill in expressing himself. Under these circumstances the listener can often improve communication effectiveness by employing eductive listening. The dictionary defines the word, educe, as follows: "To draw forth, as something latent; bring out; elicit." Therefore, eductive listening is a type of listening that draws out the speaker. In eductive listening the listener takes the initiative in the discussion and uses certain techniques to direct the discussion.

These techniques are not tricks. They are not underhanded. They simply involve listening to a person the way he wants to be listened to--the way you would like someone to listen to you.

There are certain kinds of questions that tend to encourage people to talk more than other kinds. These are the questions that include the words why, what, which, who, when, where and how. These questions.cannot be answered with a simple "yes" or "no." They are called open questions. They are good tools to use when you really want to find out what a person has on his mind.

Reflective statements also encourage people to talk. They invite a person to give us more information. A reflective statement repeats what someone has said in a slightly different way. For example, a student says to his teacher, "I don't think I'll ever be able to understand this." The teacher replies, "You're having some trouble?" This is an open invitation to further discussion.

Directive questions, when used sparingly, can also be useful in guiding a discussion. Directive questions direct a person's thoughts to a certain area. A doctor examining a patient might ask, "Have you noticed any trouble with your eyes?" With such a question, the doctor does not suggest symptoms to the patient, but he does lead the patient to think along certain lines.

It is important in encouraging people to talk, that we maintain a permissive atmosphere. This means that we must keep the person feeling free to say what he is thinking. To do this, there are several things about which the listener must be very careful.

The listener must be careful not to show disagreement, surprise or anger either by word or expression. Don't "drop your upper teeth" when he mentions something if you want him to keep talking freely about that subject. People, for the most part, are really very considerate. They do not want to cause us to have a heart attack or a stroke of apoplexy. If they see that we are getting too "shook up," they will "back away." As a result we will never find out exactly what they had on their minds.

Be attentive if you really want someone to talk to you. There are things we can do to assure people that we are "with them." Look at them while they are talking. We might look out the window and still give them our complete attention, but they doubt it. Another device for letting people know we are listening is called the "uh-huh" technique. This is making the little comments that are just automatic if we are really interested--"Oh?", "I see", "Is that so?" The sort of answers a man gives his wife while listening to her on the telephone!

Above all, let the other person do most of the talking. It takes only a few words now and then, a question here or there to encourage people to talk; and to guide the conversation.

Here, in summary form, are the suggestions for eductive listening.

EDUCTIVE LISTENING

Do	Don't
Use directive questions sparingly	Use too many "yes" and "no" questions
Use open questions Who - What - Which - When - Where Why - How	Use leading questions (that answer themselves)
Use reflective statements	Use incriminating questions that put the person "on the spot"
Be attentive (Use "uh-huh" technique)	Show your feelings (Surprise, disapproval, anger, disappointment)
Avoid interruptions	
Let him do most of the talking	Hurry him too much
	Talk too much

Using these techniques effectively to guide discussion takes some practice. It is possible for the mechanics of the method to require so much of our attention that we forget to listen to the person talking. With practice, however, what to say and when to say it will come automatically.

There is a science and an art to eductive listening. Learning the science and developing the art is a sure step you can take toward improving your person-to-person communication.

EDUCTIVE LISTENING

Do	Don't
USE DIRECTIVE QUESTIONS SPARINGLY	USE TOO MANY "YES" AND "NO" QUESTIONS
USE OPEN QUESTIONS WHO - WHAT - WHICH - WHEN - WHERE - WHY - HOW	USE LEADING QUESTIONS
USE REFLECTIVE STATEMENTS	USE INCRIMINATING QUESTIONS
BE ATTENTIVE (USE "UH-HUH" TECHNIQUE)	SHOW YOUR FEELINGS SURPRISE - DISAPPROVAL - ANGER - DISAPPOINTMENT
AVOID INTERRUPTIONS	HURRY HIM TOO MUCH
LET HIM DO MOST OF THE TALKING	TALK TOO MUCH

I LOOK AT ME

	ALWAYS	SOMETIMES	SELDOM
EMOTIONAL STABILITY			
1. Do I conduct myself in such a way that I bring out the best in those with whom I come into contact each day?			
2. Am I reasonable, fair, and open-minded?			
3. Am I tactful?			
4. Am I gentle yet firm?			
5. Do I meet difficult situations with confidence and poise?			
6. Do I accept responsibility?			
7. Do I adjust easily to change?			
8. Do I cooperate with my colleagues?			
9. Am I calm and sympathetic in discussing a student's problems with his parents?			
10. Do I give myself a fair chance for serenity by getting adequate rest and recreation and giving sufficient attention to my health?			
SINCERE INTEREST			
1. Do I respect individual personality?			
2. Do I help each student develop a sense of responsibility?			
3. Do I challenge each student to think clearly and accurately?			
4. Am I interested in the physical health of each student?			
5. Do I strive to help each child develop his greatest potential?			
6. Do I provide activities which can be accomplished with satisfaction by the slow learner?			
7. Do I challenge the capable student to do superior work?			
8. Do I keep abreast of developments in research which help me to understand individual needs more fully?			
9. Am I informed about each child's home and environment?			
10. Do I take an active interest in the out-of-classroom life of each child?			
PROFESSIONAL GROWTH			
1. Do I take genuine pride in my work as a teacher?			

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		ALWAYS	SOMETIMES	SELDOM
2.	Do I have a high regard for the teaching profession?			
3.	Do I willingly join, loyally support, and actively participate in my local association, my state association, and the National Education Association?			
4.	Do I identify myself with the Department of Classroom Teachers?			
5.	Do I support the department which represents my field of specialization?			
6.	Do I read the NEA Journal, my state journal, and two other professional magazines regularly and at least two professional books during each calendar year?			
7.	Do I write to the NEA Journal and my state educational magazine to let the editors know my comments and reactions to articles?			
8.	Do I keep abreast of current developments and trends in my teaching area?			
9.	Do I participate in in-service education programs and at least once every five years pursue advanced university studies?			
CULTURAL BACKGROUND				
1.	Do I read outstanding books and magazines?			
2.	Do I attend concerts and other cultural programs?			
3.	Do I attend or read plays?			
4.	Do I enjoy reading poetry?			
5.	Do I select radio and television programs that enrich my cultural background?			
6.	Do I have a hobby?			
7.	Do I seek out and take advantage of opportunities for travel?			
8.	Do I actively participate in at least one civic organization in my community?			
9.	Do I make some cultural contribution to my community, my state, and the nation?			
10.	Am I sensitive to the inspiring and beautiful aspects of my environment?			

WORLD OUTLOOK

		ALWAYS	SOMETIMES	SELDOM
1.	Do I read more than the front-page items in the daily newspaper?			
2.	Do I read the editorials and the education news?			
3.	Do I regularly watch and listen to news commentators?			
4.	Do I attend lectures on world affairs?			
5.	Do I follow and support the activities of the United Nations and its specialized agencies, such as UNESCO, UNICEF, and FAO?			
6.	Do I help my students to understand and appreciate the cultures and traditions of other peoples?			
7.	Am I helping my students to develop international understanding?			
8.	Do I encourage my students to study and discuss current affairs?			
9.	Am I convinced that the world forum of the United Nations contributes to the maintenance of world peace?			
10.	Do I know the purpose and projects of the World Confederation of Organizations of the Teaching Profession?			

A CHALLENGE - AM I A GOOD TEACHER ? ?

This check sheet may be used by a teacher in evaluating his work, and by so doing, possibly strengthen and improve the quality of his teaching through self-evaluation. The information is taken from "Handbook for Shop Teachers" prepared by the Division of Extension, University of Texas, in cooperation with the Texas Education Agency.

I. Teaching Shop Work

- A. Have I on hand a complete set of job sheets for each job and for each student?
- B. Are the students working successfully from the job sheets?
- C. Have I on hand good samples of each job?
- D. Do I demonstrate doing the job correctly?
- E. Do I systematically check each student's work?
- F. Do I require accuracy in performance?
- G. Do I distribute my time between students on the basis of their needs?
- H. Do I enforce safety rules?
- I. Am I teaching the job as it should be done in industry?

II. Teaching Related Work

- A. Is my related work necessary to doing the job, or is it "just nice to know"?
- B. Is the job instruction sheet more than an exercise sheet? Are the students using these sheets successfully? Or are they stored away in a drawer?
- C. Am I teaching the students every minute, either individually or through a well-organized oral presentation? Or am I lecturing or sitting at my desk or walking idly about the room?
- D. Am I stimulating the initiative of students through questions? Or am I telling everything and teaching nothing?
- E. Do I use a quiet, conversational tone of voice?

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F. Am I utilizing the best material available in visual instruction--charts, diagrams, pictures, materials, and tools from the shop?

G. Do I use a good questioning technique?

H. Do I require students to keep notes?

I. Do I select pertinent reading material and make interesting assignments?

III. Discipline

A. Are my students wide awake and interested? Are students reading a newspaper, falling asleep, gazing out the window, chewing gum, or talking to a neighbor? In other words, is every student working and working willingly?

B. Are the shades so arranged as to properly light the room, thus giving the feeling of reasonable ease? Or is the light allowed to flood the room so that the glare provokes restlessness through eye fatigue?

C. Is the floor clear of all litter? Or are rags, tools, or papers strewn about?

D. Are the tables and chairs unmarked? Or have they recently been penciled and scratched?

E. Do the students control themselves? Or is it impossible to trust them out of my sight?

F. Is my class organized? Have I class officers? Does the foreman sometimes take charge?

G. Am I assisting students outside of school hours?

H. Do my students show iniative?

I. Am I prompt, yet tactful, in handling disciplinary problems?

J. Are shop rules well selected, properly presented, and wisely and fairly enforced?

IV. Appearance of Room

A. Are the furniture and equipment arranged uniformly?

B. Are there pictures, charts, diagrams on the walls?

C. Are there shades or blinds on the windows? In what condition are these items?

D. Is the room free of foreign objects--coats and hats on chairs, on tables, on window ledges; bundles or other objects on tops of lockers?

E. Is my blackboard work instructive?

F. Is my desk clear of litter?

G. Is my supply closet orderly?

H. Have I an artistic display of either shop or related work?

I. Are cabinets and lockers in good condition when doors are opened?

J. How neat is the appearance of stock rooms?

K. In what condition do I leave the entire shop and related subjects room after the last class of the day has been dismissed?

V. Records and Reports

A. Have I an up-to-date cumulative record of progress completely filled out for every student?

B. Have I an individual record for each student, indicating each job completed? With a rating?

C. Have I a chart in front of the room indicating the progress of each student?

D. Are my records so arranged that I can get any desired information without loss of time and energy?

E. Are my reports always prepared accurately, legibly, and on time?

F. Do I keep an accurate inventory?

VI. Vocational Guidance

A. Have I recorded any noteworthy results in guiding students vocationally?

B. Do I counsel with students concerning the selection of an occupation?

C. Do I advise students on trade standards, physical requirements, and working conditions?

D. Am I interested in knowing where students are working after completing my course?

E. Do I prepare adequate publicity to attract students to my shop?

F. Do I cooperate willingly with the counselors in the school?

G. Do I take the trouble to "sell" my program to other teachers?

VII. Cooperation and Executive Ability

A. Am I pleasant when dealing with other teachers and with supervisors?

B. Am I rendering any special service to the school as a whole?

C. Do I submit required reports punctually and without second requests or follow-up of supervisors?

D. Do I offer constructive suggestions?

E. Do I exchange ideas with industrial men, other teachers,
p parents, and students?

F. Am I willing to do my share of extracurricular work?

G. Do I work well with students, teachers, and supervisors?

VIII. Attendance and Punctuality of Students

A. Is my work interesting enough to draw students to it regularly?

B. Is my work interesting enough to induce students to be punctual?

C. Am I always on the job at least 15 minutes before students report?

IX. Self-Improvement

A. Am I benefiting by the criticism of supervisors?

B. Am I reading and studying systematically?

C. Do I have a plan for summer school or other professional improvements?

D. Do I attend professional meetings regularly?

E. Am I a member of the important teachers' associations?

F. Am I up-to-date on my trade?

G. Do I visit other schools and industrial shops?

H. Do I read trade journals regularly?

PURPOSES OF TESTING AND EVALUATION

Like any other craftsman, the instructor of an occupation is working to achieve specific, measureable results. To decide whether each lesson, series of lessons, or complete course is successful, the instructor must use tests and careful evaluation that compare actual results with desired objectives.

TESTS SHOULD BE DESIGNED, AND GIVEN, TO:

1. Find out if the learner is developing the skills required for the occupation.
2. Find out if the learner can remember and use the related information demanded.

EACH LEARNER SHOULD ALSO BE EVALUATED AS TO WHETHER:

1. He follows directions well.
2. He takes criticism well.
3. He gets along with his co-workers, the other learners.
4. He can adapt and adjust to different situations.
5. His dress, mannerisms, and language are acceptable in the occupation he is being trained for.

STRICTLY AS A BONUS, TESTS HELP THE INSTRUCTOR EVALUATE HIS INSTRUCTION. A TEST CAN HELP YOU DECIDE IF:

1. The sequence of lessons is effective.
2. A lesson plan provides adequate treatment of the subject.
3. More, or better, teaching aids are needed.
4. The lesson plan is appropriate for the job and trainee.
5. Earlier tests really measured progress.

The occupational instructor may also need to evaluate himself and his trainees when making certain basic decisions.

ABOUT PARTICULAR LEARNERS, HE MAY NEED TO DECIDE:

1. When to give corrective discipline.
2. When to counsel a learner on a particular failing.
3. When to drop a trainee.
4. When, and if, he should certify a trainee for work.
5. If a particular trainee has unusual promise and should be given additional work to develop his special capabilities.

AFTER EVALUATING HIS OWN PERFORMANCE, THE INSTRUCTOR MAY NEED TO DECIDE WHETHER TO:

1. Modify or adjust his teaching procedures.
2. Modify or adjust his personal behavior.
3. Seek assistance.
4. Withdraw from the training program, because of lack of sufficient interest.

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REPORT OF SECOND ANNUAL WORKSHOP FOR COORDINATED VOCATIONAL-ACADEMIC EDUCATION

UNIT THREE: Organization and Use of Instructional Material

THE TEXAS VOCATIONAL PROGRAM FOR STUDENTS WITH SPECIAL LEARNING NEEDS

C.V.A.E.

Brownwood, Texas July 29—August 2, 1968

VT007684

TEXAS EDUCATION AGENCY
DEPARTMENT OF VOCATIONAL EDUCATION
AUSTIN, TEXAS

Second Annual Workshop
for
Coordinated Vocational-Academic Education Teachers

July 29-August 2, 1968

Brownwood, Texas

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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UNIT THREE: Course Objectives, Outlines and Instructional Materials for ORGANIZATION AND USE OF INSTRUCTIONAL MATERIAL

Third of a Seven-Unit Muster comprising the Total CVAE Workshop Report.

TEXAS EDUCATION AGENCY

Department of Vocational Education
Coordinated Vocational-Academic Education

AUSTIN, TEXAS

COURSE OBJECTIVES

ORGANIZATION AND USE OF INSTRUCTIONAL MATERIAL

Objectives of the Course

1. To develop a knowledge of how to secure, evaluate and use existing instructional material.
2. To develop a knowledge of the methods used in organizing instructional materials for effective teaching.
3. To develop knowledge and skill in using systematizing, and managing, instructional sheets available in the shop.

COURSE OUTLINE

ORGANIZATION, AND USE OF INSTRUCTIONAL MATERIAL

I.	DEFINITION OF INSTRUCTIONAL MATERIAL	(15 Minutes)
II.	IDENTIFICATION OF INSTRUCTIONAL MATERIAL	(15 Minutes)
III.	SOURCES OF INSTRUCTIONAL MATERIAL	(30 Minutes)
	A. PUBLISHING HOUSES	
	B. EDUCATIONAL AGENCIES	
	C. TEACHER PREPARED	
IV.	EVALUATION OF INSTRUCTIONAL SHEETS	(30 Minutes)
	A. AVAILABILITY	
	B. COST	
	C. SUITABILITY	
	D. ADAPTABILITY	
V.	TYPES AND USES OF INSTRUCTIONAL SHEETS	(2 Hours)
	A. INFORMATION SHEETS	
	B. JOB PLAN SHEETS	
	C. OPERATION SHEETS	
	D. PROGRESS RECORDS AND REPORTS	
	E. LESSON PLANS	
VI.	COURSES OF STUDY	(2 Hours)
	A. ANALYSIS PROCEDURES	
	B. DEVELOPMENT AND REVISION	
	C. FORMAT	
	D. USE	

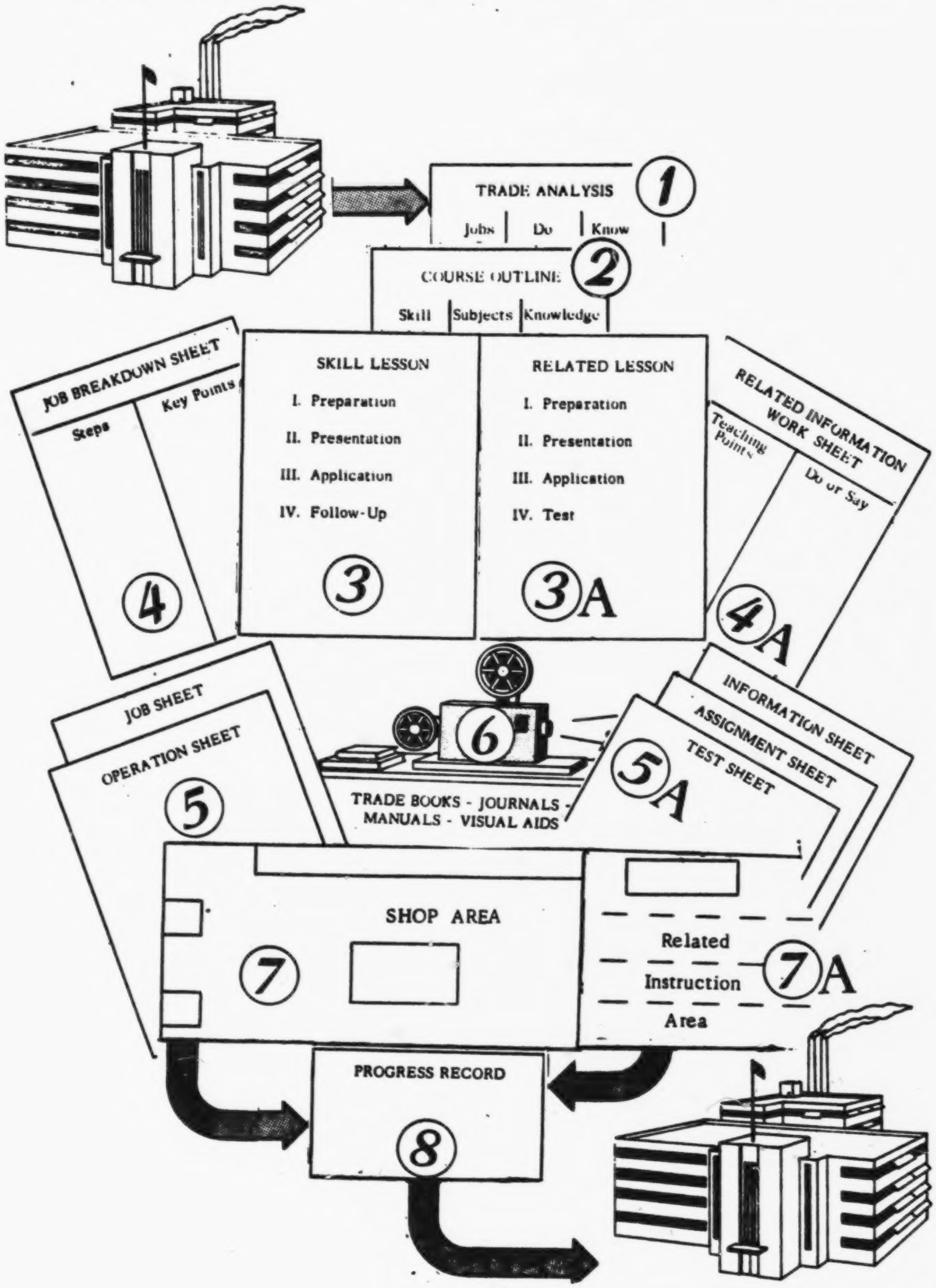
VII. DEVELOPMENT OF TEST AND EXAMINATIONS (3 Hours)

- A. ESSAY TESTS
- B. TRUE-FALSE TESTS
- C. MULTIPLE-CHOICE TESTS
- D. PERFORMANCE TESTS
- E. COMPLETION TESTS

VIII. FINAL EXAMINATION (1 Hour)

INSTRUCTIONAL MATERIALS

Evolution of Instructional Material



OCCUPATION OF HOUSEKEEPING

BLOCKS (MAJOR DIVISIONS)

- I. COOKING
- II. SEWING
- III. CLEANING
- IV. LAUNDERING
- V. MARKETING
- VI. CHILD CARE
- VII. BUDGETING
- VIII. HOME HEALTH
- IX. BAKING

UNITS

- A. BREAD
- B. COOKIES
- C. CAKES
- D. PIES

TYPE JOBS

- 1. CREAM PIES
- 2. FRUIT PIES

SPECIFIC JOBS

- a. Peach pie
- b. Cherry pie
- c. Apple pie

OPERATIONS

- (1) prepare filling
- (2) prepare dough
- (3) assemble
- (4) bake

INFORMATION FOR JOB BREAKDOWN SHEET

A step is that part of an operation in which something actually happens to further the operation itself.

For example:

> "Take hold of the wing nut" is NOT a step.
>
> "Screw down wing nut" IS a step.
>
> "Adjust the tension" is a STEP. Adjustment of the tension is fundamental to the operation at this point and is what actually happens when the wing nut is screwed down.

Job breakdowns do NOT go into hair-splitting details. They are SIMPLE, COMMON SENSE analyses of the important steps in "putting over" a job.

"Key point" is the term for whatever is the "key" to the "right doing" of a step.

Key points cover (in order of their importance):

1. Factors that "make or break" the job.
2. Hazards (in many jobs these rank first).
3. Pointers that make the job easier to do--"knack," "trick," "feel," "savvy," "special timing," "bit of special information."

Key points do not cover every conceivable detail that should be watched or that might go wrong.

Knowing what key points are and how to pick them out quickly are perhaps the most important things in job instruction.

Examples of "Key Points":

FEEL--When putting a micrometer on a piece of stock, the key point is "how tight," a matter of "feel."

KNACK--When riveting, it is important to know when to remove the pneumatic riveter. The "key" to this point is to listen to the riveting. The sound will change when the pieces are solidly together.

TIMING AND PLACING OF HEAT--When welding, there are among others two key points: (1) apply the flame ahead of the weld and (2) get the metal to the right temperature by observing the color and behavior of the metal.

HAZARD--When using a knife, a key point is to "cut away from you." When lifting a load with an overhead crane, a key point is to pull the chains or cables up taut, then hesitate for a moment to check the hitches before lifting the load.

SPECIAL MOTION--When catching hot rods rushing out of rolling mills, the key point is to swing the flowing rod in an arc away from you quickly before inserting the end in the next set of rolls.

Sample
Job Breakdown Sheet

Job Breakdown Sheet

JOB Make a Bed OPERATION Case a Pillow--Isolation Technique

IMPORTANT STEPS IN THE OPERATION Step: A logical segment of the job when something happens to ADVANCE the work. (WHAT MUST THE WORKER DO?)	Key Point: The KEY to doing the job correctly, safely, efficiently, or accurately. (WHAT MUST THE WORKER KNOW TO TO DO THIS JOB?)
1. Prepare pillowcase	1. Grasp center bottom of fresh pillowcase 2. With right hand 3. Turn case inside out 4. Pull up over right arm
Caution: Do not let bare hands touch pillow. 2. Grasp the pillow	1. At center of one end 2. With right hand 3. With the pillowcase between hand and pillow
3. Lift the pillow	1. Lift pillow clear 2. Let hang in right hand
4. Slip on the pillowcase	1. Pull the pillowcase over the pillow 2. Use care not to touch the pillow

THIS JOB BREAKDOWN WAS MADE BY____________________ DATE__________

More About the Job Breakdown Sheet

The word "job" may be used with a number of meanings. For instance, a painter may say, "I have a little job for this week--paint Mr. Munn's five-room house over on Westline Avenue." And on the same job the painter may say to his apprentice, "Your job for today is to paint the window screen frames on this five-room house."

To help the apprentice learn in a systematic manner on the job named above, a vocational industrial education instructor might organize the instruction on the job breakdown sheet format. The job breakdown sheet format is really the breakdown for one operation in a job. On this job, "Paint the Window Screen Frames on a Five-Room House," there might be six operations (and each operation requires a job breakdown sheet) as follows:

1. Remove Window Screen Frames From Windows
2. Prepare Window Screen Frames for Painting
3. Putty Nail Holes
4. Paint on First Coat
5. Paint on Finish Coat
6. Replace Screen Frames on Windows

Each operation is broken down into "Steps" and "Key Points."
The step is that part of the job when something happens to ADVANCE the work, while the key points are those items that the worker MUST KNOW to do the job.

The following series of six job breakdown sheets illustrates how the job, "Paint the Window Screen Frames on a Five-Room House," might be broken down in order to do a good job of teaching.

JOB BREAKDOWN SHEET

JOB Bake an apple pie OPERATION Prepare pie dough

IMPORTANT STEPS IN THE OPERATION Step: A logical segment of the job when something happens to ADVANCE the work. (WHAT DOES THE WORKER DO?)	Key Point: The KEY to doing the job correctly, safely, efficiently, or accurately. (WHAT MUST THE WORKER KNOW TO DO THIS JOB?)
Combine dry ingredients in mixing bowl	flour, all purpose 2 cups after sifting salt, 1 teaspoon
Mix in shortening	2/3 cup vegetable shortening cold use pastry blender to size of large peas CAUTION: Do not overmix
Add water	3 to 5 teaspoons ice water add slowly blend in with fork
Remove from bowl	flour hands and bowl lightly shape into ball use or store in refrigerator in wax paper

JOB BREAKDOWN SHEET

JOB Laundering

OPERATION Hand Wash Draperies

IMPORTANT STEPS IN THE OPERATION Step: A logical segment of the job when something happens to ADVANCE the work. (WHAT DOES THE WORKER DO?)	Key Point: The KEY to doing the job correctly, safely, efficiently, or accurately. (WHAT MUST THE WORKER KNOW TO DO THIS JOB)
Test drapes for washability	Rub sudsy water into one corner. CAUTION: Where it won't show Wipe with damp cloth If cloth stains do not wash
Prepare drapes for washing	Remove drapery pins Shake drapes Remove dust (vacuum or whisk broom)
Prepare washing solution	Fill tub with water (luke warm) Add detergent. ½ cup per gallon of water. Swish up thick suds.
Wash drapes	Place drapery in washing solution Soak drapery about fifteen minutes Force sudsy water through drapery by hand Squeeze excess water out of drapery
Rinse drapes	In clean clear water (luke warm) repeat to remove all traces of soap. Squeeze to remove water.

LESSON PLANS

1. DEFINITION. A lesson plan is a guide, to be used by the instructor in both preparation for and in the instruction of a block of class material. It should contain a heading, an introduction or motivation, a body, and a group of questions designed to test the effectiveness of the instruction. The body should be in the form of a concise outline, giving the subject matter in an organized, orderly coherent and complete fashion, enabling the instructor to be assured of conducting a satisfactory period of instruction.

2. WHY LESSON PLANS?

   Guide to instructor in preparing for class.
   Give instructor all special considerations in giving class, (training aids, classification, etc.)
   Help instructor get into the lesson.
   Guide the presentation.
   Help instructor check his effectiveness.
   Serve as a control by supervisory personnel.

3. WHEN DO YOU WRITE LESSON PLANS?

   Prior to conduct of course.
   Whenever revision is required due to course modification, etc.
   Whenever revision will improve instruction.

4. WHO WILL USE LESSON PLANS?

   Instructors
   Supervisory personnel

5. WHO MAKES LESSON PLANS?

   Instructors

6. WHAT ARE THE DIFFERENT TYPES OF LESSON PLANS?

   Topical outline
   Sentence outline
   Manuscript

7. WHO DECIDES WHAT MATERIAL EACH LESSON PLAN SHOULD COVER?

   This is determined by the Program of Instruction which is developed by the Vocational Curriculum Laboratory in conjunction with special advisory committees.

OPERATION SHEET

IN

Apparel

OPERATION: Work Buttonholes

TITLE OF UNIT: Blouses

TRADE: Tailoring

TOOLS AND MATERIALS NEEDED:

Singer Slant-O-Matic 401 machine	Embroidery scissors
General purpose throat plate	Matching thread
Special purpose foot	Buttons for which buttonholes are to be made .

STEPS	KEY POINTS
1. Mark locations of buttonholes.	1. Locate top and bottom holes. 2. Space holes between equally. 3. Determine length of finished buttonhole.
2. Make trial buttonhole.	1. Establish correct stitch setting. 2. Establish length of buttonhole. 3. Cut buttonhole, plus 1/8" for bar tacks. 4. Use doublefold of same fabric; include interfacing if used.
3. Stitch the buttonhole.	1. Make side stitching, one side. 2. Make bar tacks. 3. Repeat for other side. 4. Draw threads to underside and fasten.
4. Cut and try buttonhole.	1. Use sharp embroidery scissors. 2. Try buttonhole for finished size.

REFERENCES:

Singer Slant-O-Matic 401 Instruction Book, 1958, pp. 40-43.

Subject: QUESTIONS AND ANSWERS

Aim: To present several items pertaining to the art of questioning.

1. Importance of questioning in teaching.
    a. Arouses interest and directs observation.
    b. Stimulates thinking and the spirit of inquiry.
    c. Leads to genuine understanding and real mastery.

2. Kinds of questions.
    a. Oral
        (1) Questions may call for facts or information supplied by the memory, or they may require considerable reflective thinking.
        (2) Questions may test or review; or they may direct the students' thinking.
    b. Written
        (1) Narrative
        (2) Objective

3. Characteristics of effective questions.
    a. Should be worded so that student cannot answer unless he really knows.
    b. Should be clear and definite.
    c. In form or wording, a question should not suggest the answer.
    d. Should be stated simply, clearly and concisely.
    e. Should stimulate and require such thinking as learners are capable of doing.
    f. Each question should deal with one main idea.
    g. Catch or trick questions should not be used.

4. How to present questions to class.
    a. State the question to the entire class.
    b. Pause for a moment while all students think about the answer.
    c. Call the name of one student for the answer. (If you call on him first, all the rest may lose interest.)

WRITTEN TESTS

Related information lessons should include a written test in the final step. Written tests are also usually given at the end of a unit and a course to determine how much each learner retains.

Two basic types of questions are used in written tests, but tests are often made up of only one of the types. Objective questions are written so they can be answered with a single word, letter, or number. Properly prepared, they can be graded quickly and with great accuracy. Essay questions require the learner to write a longer answer, often in essay form. Such questions can give misleading results, because the trainee's ability to express himself becomes an important though unwanted factor.

OBJECTIVE TESTS

TRUE FALSE TESTS

True-false tests ask the learner to indicate whether statements are true or false.

EXAMPLE:

Directions: If the statement is true draw a small circle around the "T". If the statement is false draw a small circle around the "F".

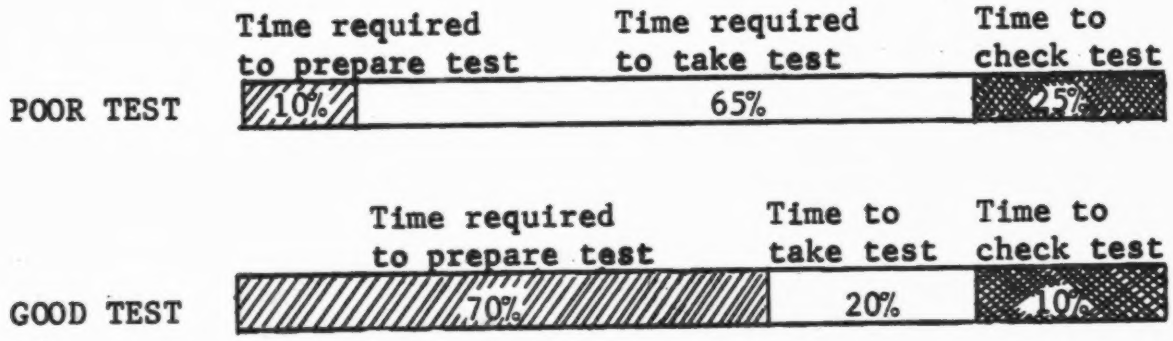
1. The density of battery electrolyte is measured with a voltmeter. T F
2. New York is one of the states requiring tests of driving license applicants. T F
3. A rising barometer indicates the approach of clearing weather. T F

1. Because guesses have a 50-50 chance of being right, such questions are not as accurate as other objective questions. If used, there should be a relatively large number of questions, and there should be approximately the same number of true and false questions distributed at random.
2. Avoid the use of words such as "always," "never," "usually." They tend to give away the answer.
3. For accurate scoring, subtract the number of incorrect answers from the number of correct answers.

TESTS AND EXAMINATIONS

Introduction

Good tests require considerable time and planning to prepare but are taken and checked quickly. The relative time consumed in the three activities--preparing, taking, and checking tests--is illustrated below.



Although there are a few exceptions, here are the requirements of good tests:

1. Comprehensive coverage of the instructional unit.
2. Relatively short time required to take and score.
3. Questions are "objective" as contrasted to "essay" type.
4. Accompanied by a key for scoring (answer sheet) to be used by instructor.

DEFINITIONS

COMPLETION TEST---A test requiring the examinee or subject to supply the missing part or parts in a series, whether numerical, verbal, pictorial, or graphic.

ESSAY TEST---The traditional type of examination in which the examinee is asked to discuss, enumerate, compare, state, evaluate, analyze, summarize, or criticize.

EXAMINATION---(1) An appraisal of ability, achievement, or present status in any respect; (2)the instrument used in making such an appraisal.

IDENTIFICATION TEST---A form of objective test in which things, ideas, concepts, locations, etc., are indicated by means of pictures or words and are to be named or otherwise identified by the person taking the test.

MATCHING TEST---A recognition form of objective test to which the examinee responds by attempting to match or pair the related items in two or more columns of related material.

MULTIPLE-CHOICE TEST---A recognition type of test in which the examinee is asked to choose for each time the one correct or best answer from several suggested answers.

OBJECTIVE TEST---A type of test so designed that the score can be determined objectively and will be essentially the same regardless of who determines the score. Typical objective test questions include true-false, multiple-choice, completion, matching, and identification.

PAPER AND PENCIL TEST---A test in which the examinee indicates his responses by writing; a conventional type of school examination not involving the use of mechanical and other apparatus, but requiring pencil and paper; a test requiring longhand writing or printing or figuring, as contrasted with oral tests or performance tests.

PERFORMANCE TEST---Broadly, any test intended to measure actual accomplishment rather than potential ability or aptitude, regardless of how the subject is instructed to respond.

RECOGNITION TEST---A test in which the examinee is required to select the right answer to each question from among a number of answers given of which one is correct. (Sometimes this procedure is reversed, the subject being instructed to select the incorrect answer or answers from among a number of responses.)

SHORT ESSAY TEST---A series of questions to which the subject is asked to respond by writing a brief answer.

SINGLE-ANSWER TEST---A type of objective test in which each item is to be answered by means of a single word either to be recalled and written down or selected from among a list of suggested answers.

SUBJECTIVE TEST---A test, such as an essay test, that is scored on the basis of the scorer's personal judgment of the worth of each answer, rather than by reference to a prearranged scoring key; often used to designate the traditional type of examination.

TEST---A critical examination or quiz, observation, or evaluation; a means for testing; any kind of device or procedure for measuring ability, achievement, interest, or performance; a series of questions or exercises or other means of measuring the skill, knowledge, intelligence, capacities, or aptitudes of an individual or group.

TRADE TEST---A test designed to measure ability in a given trade or vocation, usually based on performance in a sampling of actual processes or skills common to the trade or vocation in question.

TRUE-FALSE TEST---A type of alternate-response test in which the subject indicates whether each of a number of statements is true or false.

UNIT TEST---A test covering the content of one instructional unit.

MULTIPLE CHOICE TESTS

This multiple choice type test provides several possible answers, only one of which is right. The respondant is asked to select and indicate his choice by one of several methods.

The sample given below has been selected as the simplest to design and score.

MULTIPLE CHOICE TEST
in
GENERAL CONSTRUCTION TRADES

UNIT: Electrical wiring

DIRECTIONS: Read each statement carefully. Select one of the possible answers provided and draw a small circle around the identifying letter of your choice of answers.

EXAMPLE: An instrument used to measure current in an electrical circuit is:

A. an ammeter   C. an ohmmeter
B. a voltmeter   D. a hydrometer

(The rest of this portion of the test would be made up of questions similar to the example.)

Notice in the example that all of the choices pertain to the statement and are possible answers. Four choices seem to be the optimum number of possible choices.

Unreasonable, unrelated or ridiculous choices are instantly recognized and permit the right answer to be marked through a process of elimination.

In developing the multiple choice type test such expressions as none of these, all of these, etc., must be avoided.

Procedure for Examination Preparation

I. Test should be valid reliable.
  - a. Validity - does the test actually test what it is supposed to test?
  - b. Reliability - does the test give the same results each time when used under similar circumstances?
  - c. Factors affecting validity and reliability
    - (1) Effectiveness of instruction
    - (2) Length of test
    - (3) Physical construction of test
    - (4) Student intelligence and background

II. Tests should be objective.
  - a. Personal opinion of the instructor does not affect the scoring.
  - b. Only One best answer to each item and only one correct way of scoring it.

III. Tests should be discriminating.
  - a. An instrument to rank students according to their abilities.
  - b. Separates the better students from the average and the average from the poor.

IV. Types of tests.
  - a. Multiple choice
    - (1) Use four or five choices
    - (2) Eliminates guesswork by presenting a problem and four possible solutions requiring the student to think to select the correct one.
    - (3) Measures students ability to interpret, select, discriminate, and make application of things learned.
    - (4) Allows for rapid reliable scoring.
    - (5) Permits testing over a broader area in a limited time.
  - b. True-False
    - (1) Statements should definitely be ture or false.
    - (2) Allows for 50% guesswork.
  - c. Matching
  - d. Rearrangement - good for testing on correct procedures.
  - e. Identification - good for testing on recognition and identification.
  - f. Recall - memorization - recalling facts.
  - g. Completion - one word or phrase omitted from a statement.
  - h. Enumeration
    - (1) Determines factual knowledge
    - (2) Combination of recall, rearrangement and completion.

V. Construct Test Outline
  - a. Determine the block, phrase or area of instruction the test is to include.

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b. Select the most important topics and sub-topics within the block.
c. Selection must be done with great care so as one area is not tested too heavily and another area slighted.
d. Determine how many items the entire test will contain.
  (1) Allow for test instruction time (5 minutes)
  (2) Allow for break time. (10 minutes/hour)
  (3) Allow for critique (10-30 minutes)
  (4) Allow approximately 1-3 minutes for each multiple choice question.
  (5) There is no standard yardstick for measurement of time allowances for different types of questions.
e. Assign number of items to each topic in accordance with their importance.

VI. Physical construction of multiple choice type items. (stem and choice)
A. Stem - the question or problem
1. Use one problem
2. Pertain to subject matter taught
3. Deal with important subjects
4. Proper spelling and grammar
5. Use language of the job
Example: What color is the case of a fragmentation grenade?
Not written: What color is the case of a grenade that breaks up when it goes off?
6. Stated clearly but briefly
7. Underline and/or capitalize specific words for emphasis.
Example: What step should be performed LAST in engine tune up?
8. Avoid negative concept where possible.
Example: What method should not be used to dispose of dry cleaning solvent?
Rewritten: What method should be used to dispose of dry cleaning solvent?
9. Avoid double negatives.
Example: what may happen if transmission gears are shifted from 2nd to 3rd while the clutch is not disengaged?
Rewritten: What would happen if transmission gears are shifted from 2nd to 3rd while the clutch is engaged.
10. Avoid personal pronouns.
Example: Which of the following punches would you use to set the hair spring on the balance assembly?
Rewritten: What type punch should be used to set the hair spring on the balance assembly?

11. Avoid internal evidence
Examples: Why are mine detectors used?
a. Explode mines

* b. Detect mines
c. Lay mines
d. Move mines

What are the correct tools to use on brass gas line couplings?
a. One pair of pliers
b. Two box wrenches
* c. Two open-end wrenches
d. One cresent wrench

12. Avoid general knowledge
Example: Which of the following tools is a soft-type hammer?
a. Claw
b. Ball Peen
c. Cross Peen
* d. Rubber faced mallet

13. Construction of stem
    a. State problem first, followed by circumstance.
    b. Incomplete sentences are not acceptable because the problem is not completely stated in the stem.

B. Choices - the alternatives from which the correct answer is selected.
(1) All choices should be plausible and parallel.
    a. Distractors (the three incorrect answers) should be closely related to the problem.
    b. Distractors should present common errors or misconceptions.
(2) One correct or best choice
(3) Avoid repetitious and/or unnecessary words or phrases
Example: Which of the following is true of the disposition of accountable property records?
* (a) They may be destroyed 2 years after audit
(b) They may be destroyed immediately after inventory
(c) They may be destroyed by order of supervisor
(d) They may be destroyed when account is zeroed.

Rewritten: Whem may accountable property records be destroyed?
* (a) Two years after audit
(b) Immediately after inventory
(c) On order of supervisor
(d) When account is zeroed
(4) Undesirable choices
    a. None
    b. None of the above
    c. All of the above
    d. Both A and B
    e. Neither B nor C

(5) List choices in ascending numerical or chronological order.
Examples: What is the maximum number of degrees that a universal grinder table can be swiveled?
a. 30
b. 45
c. 60
d. 90

(6) Construction of choices
a. No periods required
b. Begin the first word in each choice with a capital letter
c. Must answer the stem

Example:

If the stem asks:	The choice should list:
What or which	things, nomenclature, procedures
What happens	methods, results, reactions
What is caused by	results, reactions
When	time elements
Where	places or locations
Why	reasons
How much	quantities or amounnts
How many	quantities or amounts

PERFORMANCE TEST

I. Definition

A test designed to analyze and measure the students skill in the performance of selected operations under rigidly controlled conditions.

II. Uses

A. Can be designed and administered to provide a more objective, reliable, and valid measure of the students ability to perform certain operations than can be obtained by any other practical means.

B. Provides a careful analysis and measurement of the extent to which the student has mastered the various elements of skill.

C. Enables the student to analyze his own strength and weaknesses.

D. Measures the result of instruction in the direct application.

E. Can be combined with situation problems to measure judgment.

III. Advantages

A. To test the student's ability to perform.

B. Enables the student to evaluate herself in specific knowledges and understandings along with a manipulative work.

C. Stimulates development of skills.

D. A more comprehensive evaluation of the Practical Nurse student can be attained with the addition of performance testing.

IV. Disadvantages

A. Time consuming to prepare and administer.

B. Limited number of students can participate in each performance test.

C. Requires additional planning for students not involved in actual testing.

D. Unless constructed to yield objective and reliable measurements it can be misleading.

V. Principles of Construction

A. Determine the objectives for the test.

Example:

1. To measure the result of instruction by evaluation of how well the student applies knowledge of related subjects in direct application with a specific skill.

2. To test students' ability and skill to perform a specific procedure.

3. To measure students' judgment and ability to follow directions.

4. To help the students to recognize strength and weaknesses in performance and judgment.

B. Select operations to be incorporated in performance test:

1. Typical and practical situations which have been taught and practiced.

2. Sufficiently difficult to reveal differences in achievement.

3. Situations for which there are sufficient equipment and materials available.

4. Select operations with definite steps of prodedure involving application of specific knowledge and understanding along with manipulative skills.

C. Make a preliminary step by step analysis of each operation to be performed.

D. Select or design an appropriate problem which will include the step by step analysis of each operation.

E. Make a list of equipment and materials required for testing.

F. List all specific points feasible for grading purposes.

Example: 1. Procedure--steps as taught and practiced.
2. Grasp of problem
Reasoning--ability to discriminate, select and make application of related information.
3. Organization of equipment.
4. Efficiency in carrying out procedure.
5. Completed assignment.

G. Construct the check list to include specific items in the performance test and a device for grading students.

H. Prepare a set of directions for the instructor to use in administering the test.

Example:

Directions for Instructor

1. Prepare work area. Provide correct number of test stations.
2. Instruct the students to follow directions carefully. (Read directions with the student--answer questions if necessary. Be sure student understands what she is expected to do.)
3. Permit students to study problem. Observe carefully her approach to the assignment.
4. Interfere as little as possible.
5. Mark check list unobtrusively.
6. If the student at any point clearly makes, or is about to make an error which will prevent her completing the test, or a major phase of it, instruct her as to the proper procedure at that point but allow her no credit on the procedure check list for the specific steps which required assistance.
7. Be sure the student's name is on the check list.

I. If possible try out the test and subject it to criticisms to improve it before administering it to students.

PERFORMANCE TEST FOR SKILLS

A performance test is used to decide whether a trainee can perform a skill--or do a job or operation--well enough to meet the standards of the occupation. Such a test should never be just a haphazard observation of the trainee doing a job. Instead, a performance test must be carefully planned and given if it is to provide an accurate evaluation of the trainee's accomplishments.

The factor of safety should be noted--safety practices on the part of the trainee in relation to his own work and regard for the safety of other workers. The elements of precaution should also be noted. Does the trainee use the hand tools, machines, and equipment in the accepted manner?

PREPARING TO GIVE A PERFORMANCE TEST:

1. Determine exactly what elements you wish to test. Are safety and precautions used? (Always important) Speed? Ability to plan work? Accuracy? Exactness in following steps and key points? Skill and confidence in using tools? Craftsmanship?

2. List the operations in the job or steps in the operation. The job or operation sheet may already contain such information.

3. By consulting the steps and key points in the job or operation, decide the acceptable standards for each element that is to be tested. Decide the relative value of each element.

4. Prepare directions to give the learner. Written directions are best since they can be standardized to give each an equal chance.

5. Prepare a scoring sheet for use when giving the test. This will provide a standardized guide when observing and evaluating the performance of each learner. The design and contents of such a sheet depend on what is being tested. Some sheets give a numerical value to each element tested, while others simply indicate whether trade standards were met.

6. List and make available the material, tools, equipment, specifications, and plans which the learner will need to perform the test.

RECOGNITION TESTS

I. True-False Test (Alternate-Response)

A. Definition

A true-false test consists of a series of statements some of which are true, some false. The student must recognize and indicate those which are true and those which are false.

B. Types

1. Regular True-False Test--consists of single statements which the student indicates to be true or false.

2. Cluster True-False Test--consists of incomplete statements followed by several phrases which will complete each statement. The student indicates those which are true and those which are false. This permits broader testing on special questions without giving clues to answers.

3. Modified True-False Tests--are designed to overcome some of the objections to the regular true-false test by providing modifications.

   a. The student is instructed to mark the question true or false and to cross out the word that makes the statement false.

   b. The student is instructed to mark the questions true or false, to identify the word that makes the statement false, and to list another word that makes the statement true.

   c. The student is instructed to mark the statement true or false, and to underline the word that makes it true or false.

C. Uses

1. To promote interest.

2. To introduce points for discussion.

3. To motivate student for a new assignment.

4. To review a previous lesson.

5. To locate points to be retaught.

6. To introduce controversial points for class discussion.

D. Advantages

1. Comparatively easy to construct.

2. May be applied to a wide range of subject matter.

3. Objective and easy to score using a key.

4. Permits a wide sampling of knowledge in a unit of work.

E. Disadvantages

1. Includes negative suggestion.

2. Guessing factor is 50-50. Modifying corrects for this factor but the modification techniques usually confuse students.

F. Principles of Construction

1. Statements should stress one important point, thought, or idea.

2. Statement should be as short and simple as possible.

3. Avoid negative statements.

4. Avoid "trick" or "catch" statements.

5. Avoid statements that are "partly" true or "partly" false.

6. Avoid ambiguous statements. (Double meaning, obscure)

7. Avoid statements that suggest the answer to other statements in the same test.

8. Avoid use of the personal pronoun "you".

9. Avoid humorous statements.

10. Avoid use of specific determiners (words giving unwarranted clues to correct answers.)

Use of specific determiners

a. Totally, entirely, only, alone; will determine a false statement 9 times out of 10.

b. All, no, none, not; will determine a false statement 8 times out of 10.

c. Always, never; will determine a false statement 3 times out of 4.

d. Almost, as a rule, generally, will determine a true statement 3 times out of 4.

e. Should; will determine a true statement 2 times out of 3.

f. Many, often, frequently, soon, seldom, few;;will determine a true statement 4 times out of 5.

11. True-False tests should consist of more than fifty statements in order to make an effective evaluation of student knowledge.

G. Suggested Arrangement of Test Page

1. Prepare a proper heading for the test.

a. Identify test, include the title of course, and course material included in test.

b. Provide space for date and name of student.

c. Provide space for grade if desired.

d. Indicate type of test.

e. Directions to students should be clearly stated. Instruct students to encircle T or F.

2. Single space lines within a statement.

3. Double space lines between statements.

4. Number statements consecutively. Arabic numbers are preferred.

5. Print "T" and "F" in right margin. Three space between the "T" and "F".

II. Multiple Choice

A. Definition

The Multiple-Choice test item is composed of an introductory statement which may be a question or incomplete statement followed by several possible answers which may be termed selection items, choices, distractors, alternates, determiners.

B. Types

1. One right answer. Consists of a question or incomplete statement with one correct and three incorrect choices.

2. Reverse multiple choice (sometimes termed inverse multiple choice). Consists of a question or incomplete statement with one incorrect and three correct choices. (If reverse multiple choice items are used they should not be mixed with one best answer and one right answer items).

C. Uses

1. To measure student's ability to interpret, discriminate, select, and make application of things learned.

2. Best measure of judgment.

D. Advantages

1. Tests judgment, reasoning and discrimination of students.

2. Tests more than memory for factual knowledge. (Tests by recognition rather than recall.)

3. Very adaptable to who, what, when and where situations.

4. Reduces guessing factor from ½ to ¼.

E. Disadvantages

1. Practically none.

2. Initial construction of multiple choice items is time-consuming but this factor is offset by usefulness of questions.

F. Principles of Construction

1. Introductory statement may be in form of a direct question or an incomplete statement.

2. Best format uses four items (choices, determiners, alternates, distractors).

    a. Reduces guessing factors from ½ to ¼.

    b. Beyond four items the "law of diminishing returns" applies.

3. All four items must apply to the same subject matter.

4. Arrange responses so that correct item appears in random order.

5. Arrange answer items in group for ease of response.

   Example: 1.
   2.
   3.
   4.

6. Avoid making correct items consistently shorter or longer.

7. For clarity of construction and to avoid confusion

    a. Write out single digit items except when combined with symbols.

       e.g. 1. one
       2. three

    b. Use figures for multiple digits.

       e.g. 1. 482

8. Use arabic numerals in consecutive order for introductory statements.

9. Use arabic numerals to identify choices and indent from introductory statement.

10. Do not use ditto marks.

11. Arrange choices consisting of numbers in ascending or descending order.

12. Use only abbreviations or symbols accepted as standard in the occupation.

13. Do not over-punctuate.

14. Avoid humorous and absurd items.

15. Control specific determiners by listing the determiner

and the alternate in parenthesis.

e.g. (a) (an)
(is) (are)

16. Include as much as possible in the introductory statement.

17. Do not use "none of the above", "all of the above", or "same as the above" as an item.

III. Matching Tests

A. Definition

Consists of two columns in which each item in Column II is to be paired with a word or phrase in Column I through some base suggestion.

B. Types

1. Matching items

2. Pictorial matching

C. Uses

1. Measures student ability to recognize relationships and make associations.

2. Particularly adaptable to who, what, when, and where, type of subject matter.

3. Efficient method for measuring factual information.

D. Advantages

1. Comparatively easy to construct.

2. Objective and easy to score.

3. Efficient as a space and time saver.

4. When properly constructed the guessing factor can be practically eliminated.

E. Disadvantages

1. Inferior to multiple choice items for measuring judgment and application--apt to stress memorization of facts.

2. Unless properly constructed may include irrelevant clues to correct response.

3. Unless skillfully prepared may be time-consuming to student.

F. Principles of Construction

1. Make the directions specific and clearly stated.

2. Make certain the matching items appear on one page.

3. Make certain there is only one correct answer for each problem.

4. Include at least three extra items from which choice must be selected.

5. Use only related materials in any one matching test.

6. Place the options in logical order if there is one.

7. Place the column containing the longer statement on left side of page with a blank preceding statement for the answer.

8. Use capital letters to label the parts in the column from which the responses are to be selected.

9. Have at least five and not more than fifteen statements in each matching exercise.

10. Avoid giving clues from grammatical construction and "sound alike" words in problems.

G. Suggested Arrangement of Test Page.

1. Type of test should be clearly identified.

2. Provide space for name of student and date.

3. Written directions should be clearly stated at the beginning of each test. The students should know exactly what you want them to do.

   Example: Match the two columns below. Use each capital letter only once and place it in the blank space provided at the left of the statement.

4. Number the statements in Column I consecutively. Use

arabic numerals.

5. Identify the choices in Column II with capital letters in alphabetical order.

6. Make certain all test items in matching exercise appears on one page.

GENERAL INFORMATION ABOUT TESTING

I. The Requirements of Good Tests

A test is only as good as its results. In other words, if a test is "good," it is good because it accomplishes its purpose effectively and economically in a particular situation. We say, therefore, that a good test is one which is objective, valid, reliable, comprehensive, and provides for economy of time in giving and scoring. Let's analyze these qualities carefully.

A. Objective

When a test can be used by two or more examiners of equal competence and gives identical or closely similar scores, it is said to have objectivity. It is a quality dependent upon purely impersonal, factual evidence rather than upon judgment, personal opinion or bias. Objectivity, therefore, applies to the giving and scoring of a test rather than to the person taking the test.

B. Valid

When a test measures what it is intended to measure, it is said to have validity. This requires careful selection of test items to avoid irrelevant and non-essential questions which are not true measures of knowledge or ability. Every term in the test should be representative of the main purpose of the unit of study being tested.

C. Reliable

A test is said to have reliability when it gives consistent results whether given at different intervals to the same group or given to different groups who have received the same instruction. Reliability, therefore, refers to the accuracy with which a test measures the things that it is supposed to measure.

D. Comprehensive

A test should give adequate coverage of the subject or that part of the subject to be tested. The questions should cover all the points emphasized in the lesson. Written tests, such as the old essay type, have only a few questions and are obviously not comprehensive.

E. Convenient

A test should be easy to use and should provide for economy of time admi administering and scoring. Its construction should be such that it is possible to test a larger number of items in a class period, and the instructor is able to score a larger number of tests with true objectivity.

II. Tests as Teaching Devices

Tests should never be frightening or confusing. They are really teaching devices and should offer real help to the learner--and they can be fun. Whenever possible, tests for measuring skills or progress should be so designed that the learner is constantly competing with himself as well as the class.

Just as lessons must have sequence, coherence, and proper relations to a preceding lesson, tests should be planned for logical order and coverage. As each lesson is mastered, its principles should be thoroughly absorbed by the student and knowledge or skill acquired is then measured by the teacher by one method or another. A test of a suitable type should be designed and developed to bring the learner's knowledge out into the open--in other words, where it can be evaluated.

In order to evaluate the learner's knowledge, the important things involved in the job, the lesson, or the assignment must be found and weighed. We are more concerned with these elements than with the recall of factual data, which is merely memorization. In the clinical area, for example, motor coordination and judgment are factors and should be considered. Too often for accuracy in measuring, we assume that all earners start the same, when actually we know no two have the same background of knowledge or ability.

Test results need not be used solely for determining a final grade. They should be used as a check on teaching and the effectiveness of the instruction upon the student. It has been found that students do more reference work when a testing program is being used.

III. Making Tests Functional

A. As an Accurate Measuring Device

1. Use questions which will reveal more reliable information on capabilities.

2. Use questions which will disclose how the student would handle specific situations or problems.

B. As a Help to the Instructor

1. They help cover more ground.
2. They stimulate student interest.
3. They encourage discussion of the issues opened by the test.
4. They save time in giving the test and in writing on the part of the student.

C. To Provide Incentive

1. Short tests (ten-minute, approximately) given regularly upon completion of the various phases of instruction emphasize and distinguish points of importance for the learner. They stimulate learning.
2. It is found that students discuss such questions freely and with interest when they understand that the instructor is using them for the purpose just stated. Teachers find that tests may be used effectively in a form of competition.
3. Tests should be designed to take care of the student of average ability, yet not so simple that they offer no challenge to the exceptional learner.

D. To Reveal Strengths and Weaknesses

1. This is the real and most important use of tests. Tests can show how much the learner knows and can point out what needs more attention from the teacher.
2. A test should not be given without a follow-up of the correct answers, or at least a comparison of class results which will indicate to the teacher those items which need re-teaching.

IV. Proper Use of Tests

A. Appraising the Effectiveness of Instruction

1. Tests must be based on instruction given.
2. Individual differences, ability, and length of experience of students must be considered.
3. Various types of tests should be used; i.e., manipulative skill proficiency should be determined by return demonstrations and the observation of the student in the

clinical area while technical knowledge may be evaluated by the various types of "paper tests."

B. Essential Principles in the Proper Use of Tests

1. Students should be encouraged to use their own judgment. This can be accomplished by not basing grades upon results of tests. Through a well organized testing program a student may become conscious of his own errors.

2. Students should be encouraged to base their judgment upon reason rather than upon guess work. Therefore, true-false tests should not be used exclusively.

3. A good test should adequately cover the essential and important part of the subject.

4. In a well-prepared test, the importance of the questions and their relative difficulty is fundamental.

5. Interpretation of test results should not only detect weaknesses in instruction but weaknesses in the test itself.

6. Tests must be so constructed that any confusion because of language difficulty is eliminated.

7. The specifications and directions for giving the test must be specific and detailed.

8. The method of scoring a test is of great importance.

V. Construction of Informal Tests

A. List the Major Objectives for Which Appraisal is Desired.

This operation should be based on the objectives of the test as to where it fits into the course of study, the unit of instruction to be tested, the scope or range of instruction included, etc. Such specifications should take into consideration the conditions under which the test is to be administered and the purpose it is to serve. A test is valid to the degree that it serves a specific purpose.

B. Drafting the Items in Preliminary Form

Pertinent material to be tested may be written on separate cards or at random on sheets of paper without serious thought of language, form, or type of test items. Care should be taken that no important points in the instruction unit are omitted. Many instructors follow the practice of jotting down from day to day, as teaching progresses, the important items to be included in a test.

C. Deciding Upon the Scope (Length)

In planning the test, attention must be given to such factors as the time available for testing and physical conditions under which the test will be given. In the try-out or first draft of the test, the time allowance should be generous. Later, as the test is used and the items are arranged in order of difficulty, etc., a more accurate timing, depending upon the ability and experience of the students, will be obtained. It is recommended that 25 or 50 per cent more items be prepared than are likely to be used. This will permit the culling out of weak items or those not needed to validate the test. It is not necessary to have an even number or any specific number of questions or test items. If the knowledge being tested is covered by 63 questions, for example, this will become the highest score possible--all students will be numerically ranked on that basis.

D. Editing and Selecting the Items

There is often a wide discrepancy between what actually determines the student's response to a test item and what the teacher intended. The items should be so phrased that the content rather than the form of the statement will determine the answer. Avoiding catch questions and ambiguous statements and stating questions simple and directly are essential. A common mistake is to include a tell-tale word or phrase which gives a clue to the answer. Sometimes clues are obtained from the spelling or grammatical form of the item. It is, therefore, good technique to present the question in language different from that of the text and class discussions.

E. Breaking the Items into Alternate Forms

As a rule, the test should include more than one type of test item. A variety of test types is likely to be more interesting to the pupil than a single form. This is especially true of long tests. All the items of a particular type should be placed together in the test. Completion, true-false, and multiple choice items of varying numbers of choices, thrown together in random order is rarely desirable.

F. Rearranging the Items in Order of Difficulty

The items in the test should be arranged in order of difficulty. It is especially important to have the easiest items at the beginning and the hardest ones at the end of the test. The exact order of the intervening items is less important.

G. Preparing the Instruction for the Test

After placing the items or questions in groups according to form or types, introduce each type with directions and give a sample question and answer with each type. The directions should be as clear, complete, and concise as possible. The aim should be to make the instructions so clear that the weakest student in the group knows what he is expected to do, although he may not be able to do it.

H. Making the Answer Keys or Stencils

A simple but satisfactory scoring key for teacher-made tests can be made by filling in the correct responses with a colored pencil on one of the unused tests. Scoring consists of placing the key beside the student's paper and comparing his responses with those on the key.

I. Revision After First Draft

After some time has elapsed and the test has been used with several classes it should be subjected to a critical revision. A careful reading of the tests after an interval of time will usually reveal some objectional items. Whenever possible, it is a good plan to have the test criticized by another teacher of the same subject. In this way some items are likely to be found which cover points of doubtful importance, others which are not clearly stated, and perhaps others about which there is a disagreement as to the answers.

A simple item analysis can be done easily by examining test items to:

1. Eliminate nondiscriminating questions.

2. Eliminate or revise a question if:

    a. The most capable students miss it as frequently or more frequently than poor students.

    b. If every student misses it.

    c. If no student misses it.

VI. Administering and Scoring Tests

A. For Administering Tests

1. Give the class clear directions covering the test.

2. In fairness to all students, the instructor should decline to answer questions while students are writing a test.

3. After a test, return the papers and discuss questions. Do not let students keep the papers.

B. For Scoring Tests

1. Definite rules are necessary to secure uniformity of scoring. As a rule, the best procedure in scoring objective tests is to allow one point for each correct response. It is unnecessary in informal tests to weigh the items according to estimated difficulty or importance. In types of tests such as the true-false and multiple choice where chance alone would make possible guessing the correct response, a correction formula can be used.

2. Use a scoring key wherever possible.

3. When scoring:

   a. Mark the total errors.

   b. Throw out unsatisfactory or misinterpreted items.

   c. Grade all papers with the same system.

RECALL TESTS

I. Essay Test

A. Definition

The essay type test item requires the student to make a comparison, write a description or explain certain points on which instruction has been given.

B. Uses

1. To promote thinking.

To evaluate student's ability to communicate in writing.

3. To locate students' writing ability in use of vocabulary, spelling, handwriting, neatness and sentence structure.

C. Advantages

1. Measures student's ability to organize his thoughts and express himself clearly.

2. Takes a comparatively short time to prepare.

D. Disadvantages

1. Time consuming to score.

2. Difficult to score objectively.

3. Time consuming for students to write.

4. Offers poor coverage of area to be tested.

5. Penalizes the student who is unable to express himself well.

6. Lacks reliability.

E. Principles of Construction

1. Decide upon the objective to be measured.

2. Call for specific answers to limit students' wide range of interpretation.

3. Require student to "compare", "explain why", "describe",

or "tell how". Do not ask student to "list" or "enumerate".

4. Determine definite specifications for grading. The best practice is to write out the points that are to be covered in items to use as a check list.

5. Follow a definite procedure in grading. Score the same question on each student's test before going to the next question.

F. Suggested Arrangement of Test Page.

1. Prepare a proper heading for the test.

    a. Identify test - include title of course and course material included in test.

    b. Provide space for date and name of student.

    c. Provide space for grade if desired.

    d. Indicate type of test.

    e. Directions to students should be clearly stated.

2. Single space lines within an item.

3. Number statements consecutively. Arabic numerals are preferred.

II. Simple Recall

A. Definition

Simple recall items require students to supply answer to an incomplete statement or question by recalling one or two words, numbers, dates or symbols.

B. Uses

1. Useful in testing specific knowledge.

2. Useful for vocabulary tests and in testing for names, dates, etc.

C. Advantages

1. Tests memory

2. Stimulates study habits

3. Eliminates guessing

D. Disadvantages

1. Not a good measurement of student knowledge. (Emotional factors involved in test writing, i.e., fear, tension, nervousness.)

2. More difficult to score.

3. Measures only factual knowledge.

E. Principles of construction

1. The required response should be only one or two words.

2. Use only one blank even though one or two words are required for the answer.

3. Arrange items for easy scoring by placing blanks near or at end of sentence. Horizontal blanks may also be placed in the right margin to facilitate the use of a key.

4. Avoid use of the specific determiners immediately before a blank, i.e., a, an.

5. Avoid lifting statements from textbook.

6. Choose statements to which there is only one correct response for the blanks.

7. Make blanks uniform in length.

F. Suggested Arrangement of Test Page

1. Type of test should be clearly identified.

2. Provide space for name of student and date.

3. Written directions should be clearly stated at the beginning of each test. The students must understand exactly what you want them to do.

Example: Each statement or question below contains a blank at or near the end of the statement. You are to supply the missing word. Write your answer in the large blank space in the right margin.

4. The blanks should appear at or near the end of the statement or question.

5. Make all blanks of equal length.

III. Pictorial Recall Test

A. Definition

Consists of a diagram or drawing with horizontal lines leading from parts to be recalled.

B. Uses

Useful for testing specific knowledge.

C. Advantages

1. Tests memory.
2. Stimulates study habits.
3. Eliminates guessing.
4. Easy to score.

D. Disadvantages

1. Measures only factual knowledge.
2. Emotional factors are involved in writing recall tests. i.e., fear, tension, nervousness.

E. Principles of Construction

1. Diagram should be clearly drawn and easy to identify.
2. All blanks should be placed horizontally and leading from parts to be identified.
3. Place all blanks on same side of diagram if possible.
4. Make blanks of uniform length.
5. Directions should be clearly stated.
6. Have at least five and not more than fifteen parts to be recalled.

F. Suggested Arrangement of Test Page

1. Type of test should be clearly identified.

2. Provide space for name of student and date.

3. Written directions should be clearly stated at the beginning of each test. The students must understand exactly what you want them to do.

   Example: You are to identify each of the parts indicated in the diagram below. Write the correct answer in the blank space provided.

4. Number blanks with arabic numerals.

5. Make all blanks of equal length.

IV. Complex Recall

A. Definition

A complex recall item consists of an essay written by instructor with key words deleted. The students are required to supply the correct answers.

B. Uses

To test recall of information learned.

C. Advantages

1. Puts essay-type material into format which accomplishes advantages of essay-type material in a more orderly fashion.

2. Easier to score objectively than essay-type test items.

3. Less time consuming to score than essay-type tests.

D. Disadvantages

1. Tests only factual material learned.

2. Time consuming to construct correctly.

3. Difficult, time consuming to score unless it is corrected by using a key.

E. Principles of Construction

1. Use only homogeneous material in a paragraph.

2. Do not copy material from reference book.

3. Make sentence completion items as specific as possible.

4. Construct items so there is only one correct response.

5. Omit only key words. Do not omit long phrases.

6. In a given sentence do not omit more than three words. A short statement with one key word omitted is preferred.

7. Use only one blank even though one or two consecutive words are required for an answer.

8. Make all blanks of equal length.

9. Avoid inclusion of irrelevent clues.

10. Never delete verbs in construction of recall items - (guessing factor too high).

11. Avoid use of specific determiners immediately before a blank. If necessary, give a determiner and its alternate in parentheses.

    Example: (is, are) (a, an)

12. To simplify scoring provide spaces for answers in right hand margin.

13. Paragraph should include no less than five and no more than fifteen blanks for answers.

F. Suggested Arrangement of Test

1. Type of test should be clearly identified.

2. Provide space for name of student and date.

3. Written directions should be clearly stated at the beginning of each test. The students must understand exactly what you want them to do.

    Example: Each of the numbered spaces in the following paragraph indicate an omitted word. Complete the meaning of each statement by writing the correct word in the corresponding numbered blank at the right of the page.

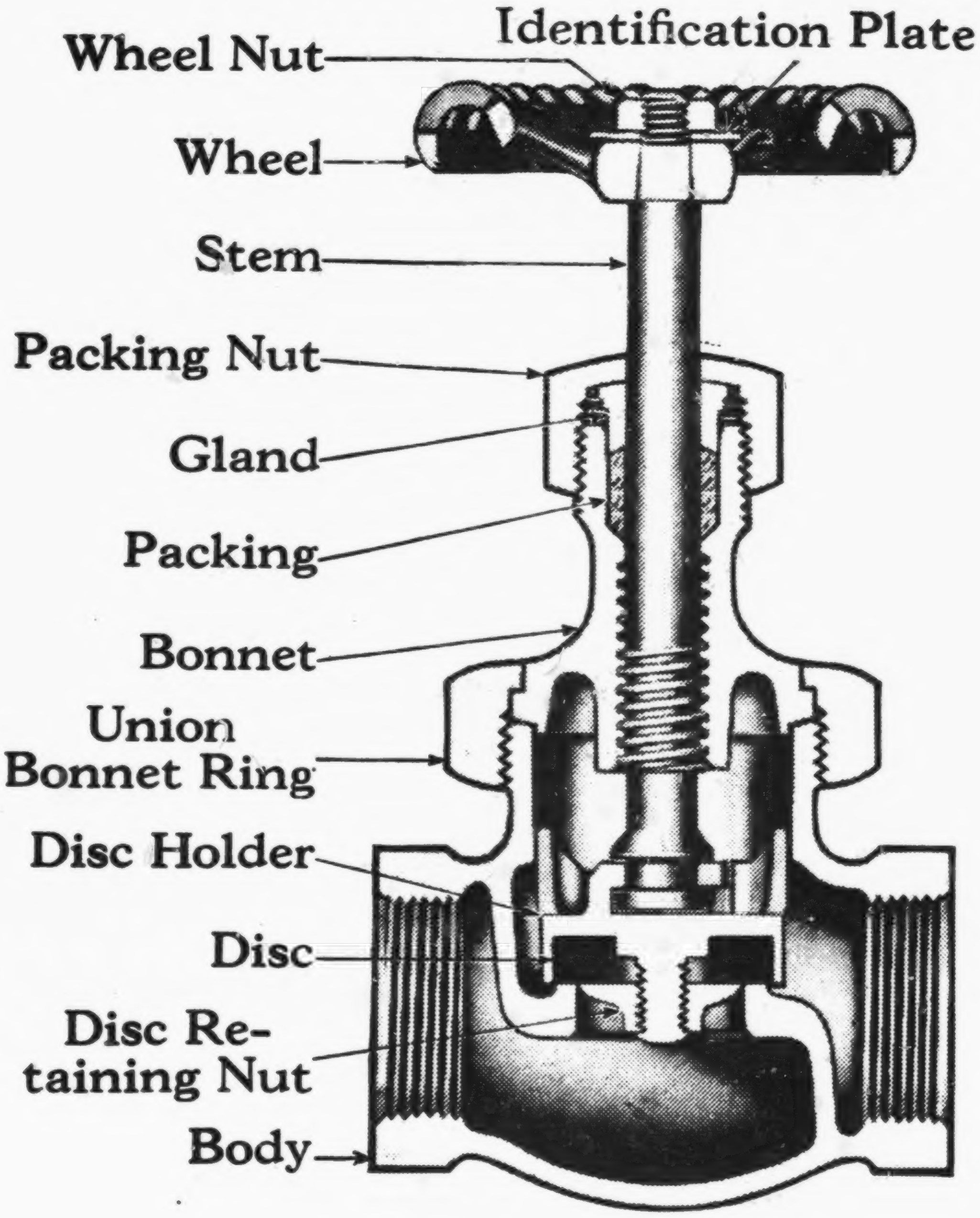
4. Make all blanks within the paragraph of equal length.

5. Number the blanks in the paragraph consecutively using arabic numerals.

6. Provide blanks with corresponding numbers in right margin for answers.

4

PARTS OF A BRASS GLOBE VALVE



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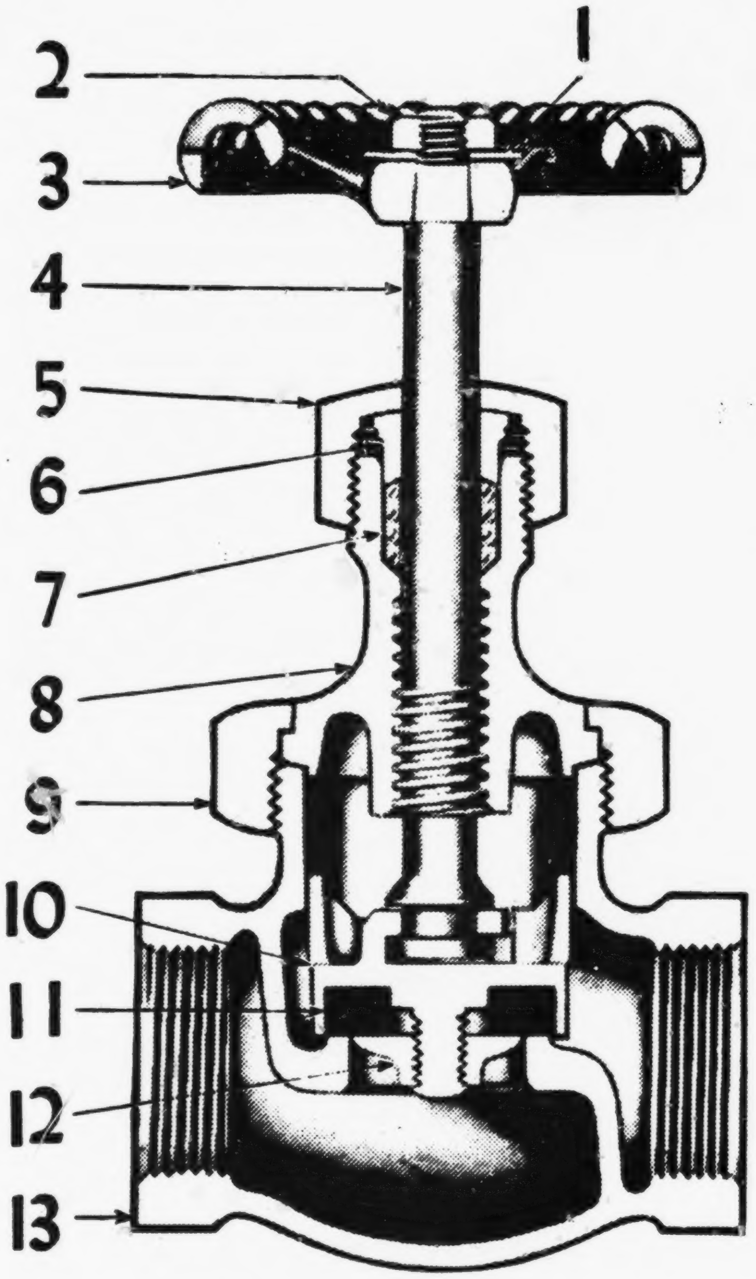
Test on

PARTS OF A BRASS GLOBE VALVE



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PROGRESS CHART

Food Service

Class ____________________ Instructor ____________________ Block IX ________

		BREAD								COOKIES										CAKES									PIES								
	JOBS NAMES	Yeast	Quick Breads							Drop	Rolled	Bar	Refrigerator	Filled						Sponge	Ready Mix	Fruit	Layer						Cream	Fruit	Single Crust	Double Crust	Refrigerator				
1	Adams, Mary	⊏	☐							∟	☐	☐	|								☐	☐							☐								
2	Brown, Susie																																				
3	Clay, Jane	☐																																			
4	Ellis, Laura	∟	☐																																		
5	Gray, Pauline	☐																																			
6	Johns, Beverly	⊏	|																																		
7	Limuel, Kathryn																																				
8	Sims, Florence	☐	☐							☐	☐	∟																									
9	Taylor, Annie																																				
10	Wesley, Louise																																				

PROGRESS CHART

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REPORT OF SECOND ANNUAL WORKSHOP FOR COORDINATED VOCATIONAL-ACADEMIC EDUCATION

UNIT FOUR: Shop and Classroom Organization and Management

THE TEXAS VOCATIONAL PROGRAM FOR STUDENTS WITH SPECIAL LEARNING NEEDS

C.V.A.E.

Brownwood, Texas July 29—August 2, 1968

VT007684

TEXAS EDUCATION AGENCY
DEPARTMENT OF VOCATIONAL EDUCATION
AUSTIN, TEXAS

Second Annual Workshop
for
Coordinated Vocational-Academic Education Teachers

July 29-August 2, 1968

Brownwood, Texas

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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UNIT FOUR: Course Objectives, Outlines and Instructional Materials for SHOP AND CLASSROOM ORGANIZATION AND MANAGEMENT

Fourth of a Seven-Unit Muster comprising the Total CVAE Workshop Report.

TEXAS EDUCATION AGENCY

Department of Vocational Education
Coordinated Vocational-Academic Education

AUSTIN, TEXAS

COURSE OBJECTIVES

SHOP AND CLASSROOM ORGANIZATION AND MANAGEMENT

Objectives of the Course

To develop in the Coordinated Vocational-Academic Teacher:

1. The ability to plan and organize for new shops, and re-organize in existing shops, equipment, materials, supplies, schedules, records, and other teaching facilities in the shop and classroom for the most effective teaching and learning.

2. To develop knowledge and understanding of good principles of management in providing, directing, control, and supervision of learning activities that will insure the most effective use of time spent in the shop and classroom.

3. To develop an appreciation of the importance of the use of a plan of organization and management that will provide for the development of essential skills, knowledge, and attitudes, and harmonious relations by reducing to a minimum discipline and other problems.

4. To develop a comprehensive system for maintaining data on student and industrial needs for effective placement and on procedures for securing valid information on student's progress after entering employment.

COURSE OUTLINE

SHOP AND CLASSROOM ORGANIZATION AND MANAGEMENT

I. INTRODUCTION (1 Hour)

- A. OBJECTIVES
- B. DEFINITIONS
    1. MANAGEMENT
    2. ORGANIZATION

II. SHOP OR LABORATORY LAYOUT (1 Hour)

- A. LIGHTING
- B. RELATED STUDY SPACE
- C. WORK AREA
- D. STORAGE SPACE
- E. FIRE EXTINGUISHERS

III. SAFETY AND ACCIDENT PREVENTION (2 Hours)

- A. SAFETY RULES
- B. SAFE WORK AREAS
- C. SAFETY INSPECTIONS
- D. ELIMINATION OF HAZARDS
- E. PROOF OF NON-NEGLIGENCE

IV. STUDENT ROTATION AND JOB ASSIGNMENT (1 Hour 30 Minutes)

- A. ARITHMETIC OF SCHEDULING
- B. PROGRESSION RECORDS
- C. CLEAN-UP DUTIES AND RESPONSIBILITIES

V. BUDGETING AND INVENTORY CONTROL (1 Hour)

- A. REQUISITION PROCEDURES
- B. MAINTENANCE AND STORAGE
- C. SELECTION OF TOOLS, MACHINES, UTENSILS, EQUIPMENT, AND IMPLEMENTS
- D. DEPRECIATION SCHEDULES

VI. RECORDS AND REPORTS (1 Hour 30 Minutes)

   A. TEXAS EDUCATION AGENCY REPORTS

   B. LOCAL SCHOOL REPORTS

   C. SHOP AND LABORATORY RECORDS AND REPORTS

VII. CLOSING THE SCHOOL YEAR (1 Hour)

   A. PUT SHOP OR LABORATORY IN STAND-BY CONDITION

   B. BRING INVENTORY UP-TO-DATE

   C. ORDER SUPPLIES FOR NEXT YEAR

   D. FILE RECORDS, REPORTS, AND KEYS WITH ADMINISTRATION

VIII. FINAL EXAMINATION (1 Hour)

INSTRUCTIONAL MATERIALS

DEFINITIONS

1. Organization - Is the physical arrangement of machines, equipment, tools, materials, supplies, schedules, and auxiliary facilities used in instruction.

2. Management - The direction and supervision of students according to the plan of organization.

3. Machines - Power operated affixed.

4. Tools-Hand - Manually operated - unaffixed.

5. Equipment - Manually operated - semi-permanent, portable or affixed.

6. Supplies - Expendable items consumed or absorbed during the process of the course.

7. Materials - Expendable items consumed or absorbed during the process of the course.

8. Vocational Industrial Education - To prepare for useful employment.

9. Descriptive Course Title - "One that tells a story" - It indicates who it is for and what it is.

10. General Safety Rules - Cover the action & activities and expected precautions of the entire shop program to students and others.

11. Shop Rules & Regulations - (Covers the expected behavior of students) all-(Policies governing conduct in class or shop).

12. Specific Safety Rules - Safety for Department, Machines, Work Stations, and Operations, etc. Safety for one machine.

13. Course Objectives - Purpose of the course-What is to be accomplished by student for entire course. Brief resume of course outline.

14. Production Plan Shop - Students work on one station until skill mastered-then rotated-until completion.

15. Project Plan - Students selects or is assigned a project to complete.

16. Departmental Plan - Students spend a certain amount of time in each department of a shop-(Unit)

17. Daily Assignments Plan - Student gets assignment daily to fit his needs.

18. Proof of Non-Negligence - Safety Program - (Rules, General & Specific) Lesson Plans, Tests, Assignments, Student copies of Safety Rules in files.

19. Skill - Hand Work

20. Knowledge - Head Work

21. Attitude - Getting along

WHAT THE TEACHER EXPECTS OF STUDENTS

1. Willingness

    to work regularly
    to follow instructions
    to accept responsibility
    to learn

2. Interest in

    The occupation or course
    carrying on class work with satisfactory proficiency
    Proper conduct in school
    fellow classmates
    improvement of himself and the class

3. Ability

    to work intelligently with and for others
    to develop
    to meet physical requirements
    to adapt to changes and emergencies
    to understand and observe policies and rules
    to exercise good judgment

4. To have the confidence and respect of students

5. Others

STUDENT EXPECTATIONS

1. Understanding of their problems
2. Clear instructions or directions -- what is expected of them
3. Adequate rating or grade -- fair in comparison with others
4. Opportunity to learn, develop, and use skills and knowledge
5. Recognition -- how they are doing
6. Fair treatment
7. Dependable instruction and supervision
8. Information -- the why of their assignments
9. Interesting and worthwhile class work
10. Freedom of expression
11. Protection from humiliation
12. Pleasant and safe working conditions in shop or class
13. Preparation for security -- personal and economic
14. Congenial fellow class members
15. Consideration as an individual

MUTUAL ARRANGEMENTS TO MAKE BEFORE FIRST SESSION

The Coordinated Vocational-Academic Education instructor must know what management and other nonteaching responsibilities are his, which belong to other individuals, and which are shared. He also must have certain information before the course begins. The Coordinated Vocational-Academic Education instructor should consult and cooperate with the other people involved to get answers to the following questions.

1. To what extent is he accountable for loss or damage to tools, equipment, and supplies? What procedures can be worked out to minimize loss and breakage?

2. Where and how can he get parts and other necessary items when the usual supply channels are closed? Whom can he call after hours? Can he buy parts or supplies and be repaid?

3. Where and how should he report damage, loss, and need for repairs?

4. Who is responsible for custodial services? What clean-up and put-away services should his group provide? Closing windows? Putting away equipment and tools? Other?

5. What storage is available? For coats and other personal belongings? For teaching aids and notebooks and similar items?

6. What to do in emergencies: Where are fire alarms? Extinguishers? Hoses? Fire escapes? Where can he get help in case of a fire? Where are first-aid kits? Are there trained individuals, such as a school nurse, who might assist? How can he get ambulance service if needed? Where should he report fires and accidents?

7. When he finds fire hazards or other hazards, how can he get them corrected? Who is responsible for correcting them?

A PRE-COURSE INVENTORY AND A SAFETY SURVEY

Before assuming responsibility for the tools, equipment, and supplies that will be used in his course, the occupational instructor should make a careful and complete inventory. The objectives are to:

1. Provide a list of all items and a description of their condition so that he will not be held unfairly responsible for loss or damage.

2. Make it possible to order any missing equipment or supplies needed. Unless they are available at the right time, equipment and supplies are useless.

3. Make it possible to arrange for all tools and equipment to be put in satisfactory operating order. Trainees should not use tools and equipment which are not functioning properly.

In addition, the instructor should conduct a safety survey. Here are some conditions which the instructor should look for when surveying a shop area for potential hazards:

HAND TOOLS that are
  (1) dull or otherwise worn
  (2) without proper handles
  (3) wrong size or kind for jobs planned

MACHINES that are
  (1) too close together
  (2) without proper safeguards
  (3) broken
  (4) improperly adjusted
  (5) insufficiently lubricated
  (6) too small or weak for the job
  (7) equipped with dull knives or cutters

SHOP CLOTHING that is
  (1) inappropriate
  (2) in poor condition
  (3) loose or flowing

MATERIALS that are
  (1) inflammable
  (2) poisonous
  (3) with sharp or jagged edges
  (4) stored in a dangerous way

The instructor should know and practice the necessary handling precautions for all materials.

DANGEROUS CONDITIONS such as
  (1) exposed electrical wiring
  (2) holes in the floor
  (3) projecting objects
  (4) unstable or broken ladders or scaffolds
  (5) defective hoisting equipment
  (6) slippery floors
  (7) inadequate lighting
  (8) insufficient ventilation or poor venting of dangerous fumes

SAFETY EQUIPMENT (first-aid kits, fire extinguishers, rubber mats, goggles) which is
  (1) inadequate
  (2) too old or inoperative
  (3) too difficult to find or reach
  (4) caustic solutions

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A complete safety survey of a shop will take time, but it is crucial because of the need to protect both the learners and the instructor. An instructor is subject to disciplinary action from his employer for letting unsafe conditions continue, and he may be legally liable for negligence that contributes to an accident. It isn't enough to find and report unsafe conditions--they must be corrected!

CHECKLIST OF ORGANIZATION AND MANAGEMENT RESPONSIBILITIES

ABOUT PHYSICAL SURROUNDINGS, ASK YOURSELF

Is there enough space? Light? Ventilation, with special provision for dangerous fumes?
Is the room at a comfortable temperature for working or studying?
Have hazards been eliminated?
Can learners see the instructor from their seats or workplaces?
Does the room meet the highest standards of cleanliness of the occupation?
Does the room meet the highest standards of orderliness of the occupation?
Are workplaces arranged as they would be in the occupation?
Are aisles kept clear?
Are storerooms organized efficiently, with most used items most conveniently placed?
Is it possible to take a "visual inventory" in the toolroom, noting what tools or other items are missing at any time?
Are there enough bins, racks, shelves, holders, and brackets to minimize damage from stocking or moving?
Is there a system for controlling flow of items in and out of storage area?
Is there protection against theft?

ABOUT TOOLS AND EQUIPMENT AND UTENSILS, ASK YOURSELF:

Is it possible to know at any time who has and is responsible for each tool or item of equipment?
If a tool crib is used, is it treated as a training opportunity for the tool crib attendant?
Are all tools clean, painted, and marked to indicate ownership?
Are all tools in top operating condition?

ABOUT CLASS ROUTINE, ASK YOURSELF:

Does everyone understand clearly when class opens? When there will be breaks? When there will be a time for clean-up and put-away activities? When class ends?
Does each trainee know the specific attendance requirements he must meet?
Is there an effective system for reporting absences?

HAVE YOU ORIENTED THE TRAINEES BY LETTING THEM KNOW:

What they can gain by successful completion of the course?
What standards they must meet in terms of skill, knowledge, and attitude?
That a good attitude is important for holding a job?
Whom to consult with particular problems?

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What agencies are cooperating in the training program, and why?
Their relation to other groups sharing shop or classroom facilities?
Their individual responsibilities for tool and machinery care?
Out-of-class study? Practice? Clean-up? Others?
Their assignments to work stations? Toolroom responsibilities?
Safety inspection teams? First aid assistance?

ABOUT HEALTH AND SAFETY OF TRAINEES, KEEP ASKING YOURSELF:

Do they wear appropriate shop clothing? Goggles? Safety shoes? Hard hats? Gloves?
Do they avoid horseplay and carelessness?
Are there adequate precautions in the use of chemicals?
Is there proper venting of dangerous fumes and proper general ventilation? Are any of the cleaning fluids used dangerously?
Are the trainees using all safety equipment, including guards on machines?
Is safety emphasized in every job and operation taught, with safety and necessary precautions taught for each step?
Is action being taken to counteract the human factors that cause accidents? Ignorance? Carelessness? Fatigue caused by continuous work, high speeds, poor lighting, heating, or ventilation? The wrong attitude on the part of trainees?
Do you know fundamentals of first aid such as treatment of shock, bleeding, or stoppage of breath? If not, do you know where to get help quickly?
Is there some way you can use posters, films, or other teaching aids for stressing general safety items? Have you tried to obtain such aids from school authorities, companies, or people in the occupation?

FINALLY, REMEMBERING THAT THE INSTRUCTOR'S EVERY ACTION TEACHES SOME TRAINEE SOMETHING, ASK THIS:

Are you setting a good example by your attitude toward safety and precautions? Standards of workmanship? Efficient procedures? Orderly and clean physical surroundings? The people you work with? Your job?

FACTORS TO CONSIDER IN SELECTING JOBS FOR TRAINING

Learning is more effective if the learner is motivated. Most people balk at cutting an eight-foot 2 x 4 into short lengths just to acquire skill in using a saw. But the same people can be kept interested if they perform jobs--or series of jobs--in which they use a tool often enough to develop the required skill. That is one reason why training should involve the learners in doing the actual jobs currently used in the occupation. In addition, learning should take place under conditions experienced in the occupation if trainees are to be prepared realistically for what they must face later.

The Coordinated Vocational-Academic Education instructor is selected because of his knowledge of the skills and jobs which must be mastered. He knows each job, he knows which skills are demanded for each job, and he knows the relative difficulty of the jobs. At one time it was necessary for most instructors to develop their own analysis for each trade, but today many complete trade analyses are available from state, local, and national organizations. With such a list, the instructor may need only to select and arrange the jobs for his particular course. In that task, he can often make use of expert assistance from a local committee of tradesmen.

Whether the jobs were selected beforehand, whether the instructor must carry out that assignment, or whether he has help from a committee, certain factors involving the teaching value of each job are involved.

TEACHING FACTORS TO CONSIDER

1. Jobs should be selected on the basis of their applicability. Teach what the individual needs to know to keep and hold a position in the occupation.

2. Jobs should be selected considering specific skills involved. Because a learner may not get enough practice in a skill on a particular job, it is important to have enough jobs to teach each skill required.

3. Each job should be evaluated for its relative difficulty. Effective teaching demands that jobs be taught simple-to-complex order. When evaluating specific jobs for relative difficulty or complexity, the instructor may need to consider requirements of speed, accuracy, finish, muscular coordination, knowledge, and judgment. Other factors may be involved, depending on the job and occupation.

4. As far as possible, each job should produce a useful result. This policy will help motivate each learner to do his best. For example, a person is naturally more interested in repairing a garment that

will be worn than he would be in doing the same job on a garment that will be returned to the rag bag. He needs the feeling of useful accomplishment

MANAGEMENT RESPONSIBILITIES

After he has selected the jobs that fit his teaching needs, the instructor will still have additional information to gather and decisions to make. He will need to determine or decide:

1. Where to obtain materials, equipment, and supplies

2. What paperwork is necessary.

3. In the case of a production job that results in finished articles, there will be special considerations. The instructor will need to dispose of the articles--by sale or by giving them to a charitable institution. In a sale, the charge might reflect such things as cost of materials, overhead, and the approximate cost of the article if bought at retail or manufacturing costs.

4 In the case of service jobs--such as repairing an individual's car--similar factors are considered when setting a price.

5. In all jobs involving customers for the completed work, there are special considerations. Will the school be accused of competition with workers in the community? Does the customer know learners are doing the work and there may be mistakes, and delays in delivery?

6. A production job done for a specific customer may require a definite business procedure with a written order, specifications, contract, records, and other items.

7. If the training takes place in an industrial plant, it may be necessary to make special arrangements for insurance on the learners.

REQUISITIONS, RECORDS, AND REPORTS

Depending on the type of cluster in which he is involved, as well as on the school and other organizations with which he works, the instructor will **do a varying amount of paperwork.** In some situations the instructor may be partly responsible for finding out what is required of him. Before he starts actual teaching, the instructor should determine the kind of paperwork that will be necessary.

Common types are:

REQUISITIONS, which must be filled out and submitted to obtain supplies, equipment, materials, and services such as the repair of machines. A school or other organization may require special requisitions for:

1. Regular supplies or materials
2. Equipment, tools, or utensils
3. Emergency purchases
4. Repair work

Equally as important as knowing what type of requisition is needed--and how to complete it--is knowing who should receive the completed form. Understanding and using "channels" will help speed results.

REPORTS, which are prepared by the instructor to inform someone else. A report may go to local, state, or federal authorities--to school, company, or governmental officials cooperating in a training program. Reports may be required for:

1. Accidents
2. Attendance
3. Enrollment at the start of a course
4. Number of successful trainees and their names

RECORDS, which are kept by the instructor for his own use, but they may be required to back up something in a report, to justify expenditures or decisions, or to show that training and shop management were conducted in the proper way. Common types of records show:

1. Attendance at each session and for each individual
2. Progress of each individual during the course
3. Jobs performed by each trainee to develop skills
4. What books and other teaching materials are checked out
5. Use of supplies and materials
6. Condition, breakage, and loss of tools
7. Repair, servicing, oiling, and other maintenance of machinery

The inventory made at the first of a course is an important record and it may be desirable to make a similar inventory when training is completed. Also, the safety survey and resulting actions taken to correct hazardous conditions could be a useful record in some situations.

PREPARING RECORDS, REPORTS, AND REQUISITIONS

Regardless of the nature of the specific type of paperwork required of a particular instructor, there are certain recommendations that will always prove helpful.

1. All paperwork should be accurate, complete, neat, and legible.
2. Because of the need for accuracy and completeness, and because memory is not entirely reliable, it is important to gather data on an "as-you-go" basis. Whenever something occurs that should be recorded or reported, write yourself a note.
3. Reports should be filed promptly, so make a point of allowing yourself plenty of time to prepare each report. It might be possible to use an assistant from the class to help with the detail work of keeping records and making reports.
4. Don't forget that a record is useless unless it is in a place where you can quickly and easily get it. File records in a way that will make it easy to retrieve them.

TOOL SYSTEMS USED IN VARIOUS SCHOOL SHOPS AND LABORATORIES

1. SCRAMBLED-DIGGER SYSTEM

Keep them piled in a heap on a bench or table. Dig through the pile till you find it--this will strengthen your fingers.

2. SCATTERED-HUNTEM SYSTEM

Leave them where they were last used. When you need a tool, waste some time and patience trying to find it--the exercise will help you keep fit (for tying).

3. LIQUID SYSTEM

Throw your tools in a cleaning tank, or in a can of solvent, until you need them again. You can usually depend on them always being there with this method, as no one else wants to put his hands in it--until he gets them dirty anyway.

4. HIDEAWAY SYSTEM

Put all your tools in a sack and stick them in a locker or drawer. It probably doesn't make any difference whether or not you can see them. You know what tools are in the shop--to heck with anyone else.

5. HOARDING SYSTEM

Keep all the tools locked up (all the time). Dole tools out as individuals need to use them. This system is very effective for rapid aging, especially when you are busy, or having visitors.

6. OPEN HOUSE SYSTEM

Keep tool room open at all times. Go in and get what you want. No one knows where they are (or usually where they went). This is especially good for training future inmates for our over-populated hoose-gows, and helps to keep your budget nice and trim.

7. CONFUSED-CHANGER SYSTEM

..Usually starts with a good system and good intention. Due to pressures, resorts to most any way to get by. This is usually the hopeless situation of the non-worrier, but it makes the day long and tense.

NOTE: The tool system used is no better than the regulations and rules set up to govern it, and the enforcement of the system by the instructor. You have to develop a plan, and work the plan.

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Arithmetic of Schedule Making

Schedules must be worked out for each particular shop and a specific number of students.

Example: Consider a General Metal Shop with the following work stations:

8 Bench Work
6 Sheet Metal
2 Oxyacetylene Welding
2 Lathe Work
2 Blacksmithing
2 Foundry
3 Electric Arc Welding
2 Drill Press

To find the maximum number of weeks that a student can stay on one unit work station and still get experience in all other units of work, the following formula is used.

I. $\frac{\text{UWS} \times \text{SW}}{\text{TNS}} = \text{MW}$ $\qquad$ $\frac{\text{Unit Work Stations} \times \text{School Weeks}}{\text{Total Number Students}} = \text{Maximum Weeks}$

EXAMPLE: With 8 bench work stations and 25 class members, how long can one member stay on bench work?

Solution: $\frac{8 \times 36}{25} = 11.5$ or 11 weeks (Use whole number only.)

EXAMPLE: How many weeks can one member be assigned to the Foundry Unit when there are two work stations in this unit, and there are 20 class members?

Solution: $\frac{2 \times 36}{20} = 3.6$ or 3 weeks

This list shows 25 work stations (drill presses are considered a part of bench work), which could take care of 25 class members for any one week if all machines and equipment were in good repair; but there are not enough work stations to allow for the rotation of shop members to make their work experiences fit the length of time at each work station as recommended in the Course of Study for General Metal Shops in Texas Schools. It would be necessary to install more work stations in this shop or reduce the number of shop students.

Before the actual schedule sheet is started, compare and estimate relatively the number of work stations, the number of students, and the recommended number of weeks in the course of study. The following formula will be of assistance in determining whether the schedule can be made.

II. $\frac{\text{WD x TNS}}{\text{UWS}} = \text{WP}$ $\frac{\text{Weeks Desired x Total Number Students}}{\text{Unit Work Stations}} = \text{Weeks Possible}$ (must be less than 36)

EXAMPLE: It is desired to give each of 20 students 10 weeks of lathe work in a shop where 8 lathes are available.

Solution: $\frac{10 \text{ x } 20}{8} = \frac{200}{8} = 26$

Since the result of the calculation above is less than 36 (weeks in school year) a schedule can be arranged and will balance if all equations for work stations, similar to above, come out with a number less than 36.

EXAMPLE: It is desired to give 20 class members each 6 weeks of electric welding during a school year of 36 weeks when there are available in the shop for use 3 electric arc welding machines.

Solution: $\frac{6 \text{ x } 20}{3} = \frac{120}{3} = 40$, which is more than 36

Since 40 is greater than 36, this number of weeks in electric welding for all 20 students cannot be scheduled. There are two possibilities for balancing the schedule--reduce the number of weeks of training on the electric welding unit, or increase the number of welding machines.

A recapitulation of the use of formulas is shown below using a class of 20 students:

1 Code Letter	2 Name of Work Units	3 Recommended No. of Weeks	4 Number of Work Stations	5 Formula I	6 Formula II on Results in Col. 5	7 Formula II (See Col. 3)	
						Mins.	Max.
H	Bench Work	10 - 16	8	14	35	25	40
T	Sheet Metal	6 - 10	6	10	33	20	33
O	Oxy-Acetylene Welding	2 - 6	2	3	30	20	60
L	Lathe	10 - 16	2	3	30	100	160
B	Blacksmithing	2 - 6	2	3	30	20	60
F	Foundry	2 - 6	2	3	30	20	60
E	Electric Arc Welding	6 - 10	3	5	33	40	66

SAFETY DEFINITIONS

ACCIDENT--an unplanned and uncontrolled event in which the action or reaction of an object, substance, person, or radiation results in personal injury or the probability thereof.

ACCIDENT PREVENTION--an integrated program, a series of coordinated activities directed to the control of unsafe personal performance and unsafe mechanical conditions and based on certain knowledge, attitudes, and abilities.

AGENCY--the object or substance which is most closely associated with the injury and which, in general, could have been guarded or corrected.

AXIOM--an established principle which is universally received.

FOUNDATION OF THE MAJOR INJURY--from review of data available concerning the frequency of potential-injury accidents, it is estimated that in a unit group of 330 accidents of the same kind and involving the same person, 300 result in no injuries, 29 in minor injuries, and 1 in a major lost-time injury.

HAZARD--"direct and proximate (immediate) accident cause"; the unsafe personal act and/or the unsafe physical or mechanical condition without which an accident cannot occur.

PHILOSOPHY--the body of principles underlying this branch of learning.

SAFE (adjective)--free from injury or risk; unhurt.

SAFETY--condition of being safe; freedom from danger or hazard.

SAFETY EDUCATION--primarily the process of imparting knowledge of safe and unsafe mechanical conditions, safe and unsafe personal practice, and of remedial measures.

THEOREM--that which has been proved and established as a principle or law.

UNSAFE ACT--that violation of a commonly accepted safe procedure which resulted in the selected accident type.

UNSAFE MECHANICAL OR PHYSICAL CAUSE (ENVIRONMENTAL CAUSE)--the condition of the selected agency which could and should have been guarded or corrected.

UNSAFE PERSONAL CAUSE (BEHAVIORISTIC CAUSE)--the mental or bodily characteristic which permitted or occasioned the selected unsafe act.

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SAFETY EDUCATION: WHAT ARE THE CHALLENGES TO THE SHOP AND LABORATORY TEACHER?

The challenges facing the shop and laboratory teacher in safety and accident prevention are many. It seems that the following must be included in any list of challenges and obligations the teacher must accept.

1. The teacher must believe that safety and safety education are a legitimate and necessary part of his program.

   Is this a reality? If you were to ask 100 shop teachers, selected at random, how they felt about the above statement, I suspect you would get close to, if not, 100 percent acceptance. But would facts bear them out? You do not need to visit many shops and observe what goes on and note physical conditions--much of which is decidedly substandard--to question the sincerity of those stated beliefs.

2. The teacher must be familiar with industrial procedures and know what industry expects of his students.

   In my work with the National Safety Council, I have become acquainted with many industrial safety engineers. I have made it a point to ask each new person I meet about the young workers who come to them from our schools. Almost universally the answer is that, so far as skills and knowledge of operation are concerned, they find the students well equipped. Too often, however, they find it necessary, not only to acquaint the student with sound safety procedures, but in many cases they must correct bad habits and faulty attitudes. The teacher must keep himself and his students abreast of current best practices in safety as well as operational procedures.

3. The teacher must know how to instill proper attitudes toward safety.

   For teachers, there are courses which purport to deal with attitude development. For workers and students, a course in attitude development would not go to first base, yet it is with students that the job must be done. The answer is more subtle and complex.

   The first, and possibly the most important, influence is the environment. New attitudes develop in an environment that is favorable to them. Many things make up the environment. Here are just three:

   Physical surroundings
   The teacher
   The other students

By *physical surroundings* I don't mean new buildings and air conditioning. I do mean the place should be clean and orderly. The comfort and safety of students should be given consideration. Unnecessary noise, smells, and extremes of temperature should be eliminated. Good attitudes can be developed in a place like that. They don't stand much of a chance in the other kind of a place.

The teacher is part of the environment. Is he the kind of a person for whom the students like to work? Is he fair, just, and understanding? If he is, he has a good chance of developing some decent attitudes in his students, but he'll never do it if he isn't.

Fellow students are important. Their influence is probably greater than that of the teacher, the principal, or the superintendent. The teacher can tell a new student the importance of some safe practice--the wearing of safety goggles, for example. He agrees, but when the teacher leaves him, what does he do? He looks around to see what the other fellows are doing. If they are wearing goggles, he does too.

Attitudes are influenced strongly by example. The old saw, "Attitudes are caught, not taught," has a great deal of merit. The teacher must practice what he preaches. If he tells the students to use guards, he must use them himself, without exception. A second example is that set by the administration. A guard does more than keep hands out of trouble. It says to everyone who sees it that the teacher and others who run the school think that keeping hands out of danger is important, and that goes a long way toward building good safety attitudes.

4. *The teacher must maintain a safe environment*.

The school has a moral and legal responsibility for providing a safe environment. The safe environment must be maintained not only as a basis for accident-free operation of school activities but as an example of safe working conditions. Some of the fault of poor housekeeping may be due to lack of administrative support and insufficient funds to provide the proper protective equipment. Those things, however, should never be used as a crutch to minimize laxity on the part of the teacher.

Much of the unsafe environment that can be found in a large number of shops is attributable to the individual teacher and poor housekeeping. Most of it does not require administrative action or any appreciable amount of money. Much can be accomplished by just cleaning up the place and keeping it that way.

5. *The teacher must offer a sound program of instruction*.

Immunity against accidents cannot be produced by psychological innoculation. Accidents result from faulty attitudes, bad habits, poor skills, and insufficient or incorrect information. Education can insure safe living on and off the job. Consequently, good instruction is a most important aspect of school shop safety. Yet, this is where we are getting not much more than lip service and clicking of the plastics. Good instruction starts with the very first introduction a student gets when he comes to the shop. He needs to be told what the school believes and practices about safety. The teacher cannot assume the student knows what to do, and he cannot leave it to a printed book or posters on the bulletin board.

The next kind of instruction, of course, is job instruction on every operation, repeated as often as necessary. I don't believe you can have good attitudes without knowledge and skill. If a boy or man knows his job thoroughly, if he is very good at it, his attitude is likely to be good. Moreover, when a teacher gives good, careful job instruction, he gives evidence that he thinks the boy and the job are important.

6. The teacher must have an inquiring mind and develop the same thing in his students.

Often, too many people--including teachers--are willing to accept what they read or what they are told. To accept and use safety zones around machines, shop rules, color dynamics, and only positive instruction just because the teacher has heard they are good, is bad. I do not say these things are bad. I do say the teacher will not realize the merits of these procedures unless he fully appreciates their shortcomings as well as their virtues.

7. The teacher must know the nature, extent and trend of school shop accidents generally and locally.

I would wager the school shop accident situation is no different today than it was 20 years ago. If this is so, it is a sad commentary on what we have been doing for safety and accident prevention.

By: Wayne P. Hughes, Director
School and College Department
National Safety Council

INFORMATION SHEET

__________Occupation
Information Sheet
Year________
No. ________
Code________

SUBJECT: ACCIDENT PREVENTION IN THE SHOP

AIM: To encourage safe practices in the shop or laboratory and develop a desire to prevent accidents by careful compliance with all safety regulations and precautions.

INTRODUCTORY INFORMATION:

One of the dangers that we all have to face, not only in the shop but in every activity in which we engage, is accidents. Accidents don't just happen, they are caused. If anything is caused, it can be prevented by removing the cause. Let's analyze the cause of accidents, in order that we may remove as many of them as possible, thereby reducing the number of accidents.

GENERAL INFORMATION:

Two things are the cause of most accidents, CONDITIONS and ACTIONS. We will list these conditions and actions in the left column and a remedy for them in the right column.

CONDITIONS CAUSING ACCIDENTS	REMEDIES
Inadequately guarded machines	See that all machines have adequate guards whether they are furnished by the manufacturer or are made in the shop.
Defective machines (rough, sharp, slippery, decayed, cracked, etc.)	Keep all machines and other equipment in top repair. If anything appears to be unsafe, report it to the instructor.
Unsafe design of construction	If it is possible the machine should be redesigned or reconstructed, if not, then the machine should be used only with the greatest of caution.

CONDITIONS CAUSING ACCIDENTS	REMEDIES
Hazardous arrangement	This is one that can be almost entirely eliminated by careful planning. All shop personnel should cooperate in such planning.
Unsafe ventilation	Should be brought to the attention of the administration. Very seldom will such a condition be permitted to continue if serious.
Unsafe clothing	Never work around machinery in any kind of loose-flowing clothing. There is no surer way to get tangled in moving machinery than by dangling shirt sleeves, shirt tail hanging on the outside of pants, wrist watches or bracelets, key chains, rings, etc.
ACTIONS THAT CAUSE ACCIDENTS	
Operating without authority	Never under any circumstances attempt to operate any machine until you have been thoroughly familiarized with that machine and have received your instructor's permission.
Operating or working at unsafe speed	Haste makes waste is an old proverb, and nowhere is it truer than in the shop where machines are used. When in a hurry shortcuts are taken which greatly increase the probability of an accident. Take your time.
Making safety devices inoperative	When the maker provides a guard for a machine it is because he has found that it is dangerous without it. Disregard of safety devices is one of the surest ways to CAUSE accidents.
Distracting, teasing, abusing, or startling another worker	Many accidents are caused by what was intended as a practical joke. Because a person's attention was momentarily taken away from what he was doing, his life or his arm or some other part of him was

taken away permanently. NEVER INDULGE IN HORSEPLAY IN THE SHOP . . .IT IS DANGEROUS!

UNSAFE ACTS AND CONDITIONS

Unsafe Acts of Persons	Unsafe Mechanical or Physical Conditions
1. Operating without authority, failure to secure or warn	1. Inadequately guarded, guards of improper height, strength, mesh, etc.
2. Operating or working at unsafe speed	2. Unguarded, absence of retired guards
3. Making safety devices inoperative	3. Defective, rough, slipping, decayed, cracked, etc.
4. Using unsafe equipment or equipment unsafely	4. Unsafely designed machines, tools, etc.
5. Loading, placing, mixing, combinating, etc. unsafely	5. Poor housekeeping, unsafely arranged, congestion, etc.
6. Taking unsafe position or posture	6. Inadequately lighted, sources of glare, etc.
7. Working on moving or dangerous equipment	7. Poor ventilation, impure air source, etc.
8. Distracting, teasing, abusing, startling, etc.	8. Unsafe clothing, no goggles, gloves, masks, etc.
9. Failing to use safe attire or personal protection devices	9. Unsafe processes, mechanical, chemical, electrical, nuclear, etc.
88%	10%
98% of industrial accidents are of a preventable nature. 88% of all industrial accidents are caused primarily by unsafe acts of persons.	2% are acts of God. 10% of industrial accidents are due to physical and/or mechanical conditions.

TEACHERS' ACTS OF NEGLIGENCE THAT LEAD TO LIABILITY

Negligence is the failure to act as a reasonably prudent and careful person would under the circumstances involved. The presence or absence of care demonstrated by a teacher is usually a question for a jury. Following are acts of negligence that might involve a teacher in a liability suit.

1. Leaving the shop or classroom during class period.

2. Sending students on teacher errands or assignments during class period.

3. Allowing students to leave the school ground without permission from administrative heads. (Good administrators will also get parents' permission for students to leave school.)

4. Permitting the use of faulty machines, tools, equipment, and facilities.

5. Permitting the use of machines and equipment without safety guards.

6. Allowing other students and minors to pass through or take part in shop or classroom activities during class.

7. Allowing students to wear unsafe clothing and accessories while using machines and equipment.

8. Allowing poor housekeeping practices which result in conditions hazardous to safety and health.

9. Requiring all students to use power equipment.

10. Leaving the shop with unqualified teachers in charge.

11. Permitting students to operate machinery or equipment without proper instructions on performance and safety.

12. Failing to show evidence of teaching safety. (Lesson plans, tests, rules, and student permits should be on hand.)

13. Permitting students to do work outside of the shop without supervision of qualified people.

14. Allowing after-hour work sessions, especially unsupervised. (Laws are the same as they are for class sessions.)

15. Failing to complete accident reports, regardless of how minor.

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16. Failing to get written statements from witnesses of accidents.

17. Failing to teach and exercise safety rules and practices at all times.

18. Failing to recognize and practice the additional safety precautions demanded by law for minors.

19. Allowing mentally or physically unfit students to operate power equipment and work in hazardous areas.

20. Striking students.

The teacher acts in the place of the parent in relation to the pupil. His duties and rights are equal to or greater than those of the parent insofar as negligence is concerned.

THE COLORS RECOMMENDED BY THE AMERICAN STANDARDS ASSOCIATION SAFETY COLOR CODE ARE AS FOLLOWS:

RED

Red is the basic color for the identification of:

(a) Fire protection equipment and apparatus
(b) Danger
(c) Stop

The following is a partial list of uses:

FIRE PROTECTION EQUIPMENT AND APPARATUS

Fire Alarm Boxes (pull boxes)
Fire Blanket Boxes
Fire Buckets or Pails
Fire Extinguishers (If painting the extinguisher is impracticable or undesirable, color should be used on the housing, wall, or support to identify the location)
Fire Hose Location (Color should be used on the reel, supports, or housing, but not on the hose)
Fire pumps
Fire sirens
Post Indicator Valves for Sprinkler System (It is suggested that if traffic hazard is involved, the top should be colored red, and the barrel or post Yellow and Black stripes)
Sprinkler Piping

"DANGER"

Safety cans or other portable containers of inflammable liquids (excluding shipping containers) should be painted Red with some addition clearly visible identification either in the form of a Yellow band around the can or the name of the contents stenciled or painted on the can.

Red lights at barricades, at temporary obstructions, and on temporary construction, as specified in American Standard Safety Code.

Danger Signs.

"STOP"

Emergency stop bars on hazardous machines, such as rubber mills, wire blocks, flat work ironers, etc.

"Stop" buttons for electrical switches used for emergency stopping of machinery.

YELLOW

Yellow is the basic color for designating "Caution" and for marking physical hazards, such as striking against, stumbling, falling, tripping, and "caught in between." Solid Yellow and Black stripes, Yellow and Black checkers (or Yellow with suitable contrasting background) should be used interchangeably, using the combination which will create the best attention for the particular environment.

The following is a partial list of uses:

Construction Equipment (or areas thereon) such as bull-dozers, tractors, carryalls, etc.
Corner Markers for storage piles.
Coverings or guards for guy wires.
Exposed and unguarded edges of platforms, pits, and walls.
Fixtures suspended from ceiling or walls which extend into normal operating areas (within the clearance diagram of plant traffic).
Handrails, guardrails, or top and bottom treads of stairways where caution is needed.
Industrial Locomotives (or areas thereon).
Inside of covers of switch and fuse boxes
Inside of movable hood guards, such as picker guards in textile plants.
Inside of transmission guards for gears, pulleys, chains, etc.
Lips on horizontally closing elevator doors.
Lower Pulley Blocks and Cranes.
Markings for projections, doorways, traveling conveyors, low beams and pipes; the frame of elevator ways and elevator gates.
Material Handling Equipment (or areas thereon) such as industrial tractors, trucks, trailers, fork lifts, conveyors, gantry cranes, etc.
Pillars, posts, or columns which might be struck.
Strike along sides of freight car loading plates or runways.
Waste containers for explosive or highly combustible materials should have a Yellow band around the containers. The width of the band should be not more than one-third the height of the can. Wording to indicate the contents should be painted on the Yellow band in large Red letters such as "EXPLOSIVE", "COMBUSTIBLE", or the name of the material in the container.
Caution signs.
Piping Systems containing dangerous materials.

GREEN

Green is the basic color for designating safety and location of first aid equipment. Solid Green, Green and White Stripes, Green cross on White background, or White cross on Green background should be used in accordance with local conditions.

The following is a partial list of uses:

Location of First Aid Dispensaries.
Location of First Aid Kits.
Location of Gas Masks.
Location of Stretchers.
Safety Bulletin Boards.
Safety Deluge Showers or their location (A predominance of White color to aid visibility is suggested).
Safety Starting Buttons (such as inching buttons on dough mixers, metal planers, boring mills, laundry washers)
Exit Signs -- Unless there are legal requirements to the contrary.
Safety Instruction Signs.

BLACK AND WHITE

Black, White or a combination of these two are the basic colors for designating housekeeping and traffic markings. Solid White, solid Black, single color striping, alternate stripes of Black and White, or Black and White checkers should be used in accordance with local conditions.

The following is a partial list of uses:

TRAFFIC

Dead ends of aisles or passageways
Location and width of aisleways
Stairways (direction lines)
Direction Signs

HOUSEKEEPING

Location of refuse cans.
White corners for rooms or passageways.

OTHER COLORS

In developing the A.S.A. Standard Color Code, Orange and Blue were also considered, but were designated as not being absolutely essential but, rather, optional procedures. Suggested uses for Orange are:

Interior of electrical switch boxes, fuse boxes, power boxes, machine guards. On exposed parts, Orange may be used on pulleys, gears, cutting devices, and rollers. Blue may be used as a symbol of caution to identify equipment or apparatus out of service, for repair or which must not be used, moved or started, such as ovens, electrical controls, valves, vaults, driers, scaffolding, vats, oilers, compressors, kilns, and tanks.

RATING SHEET
FOR
COORDINATED VOCATIONAL-ACADEMIC EDUCATION
SHOP AND LABORATORY

Instructions:

Insert a number, 1, 2, 3, 4, or 5, regarding conditions that exist in this program. The lowest rating is 1 and the highest is 5.

TOOLS

Rating

1. Tools, impliments and utensils are arranged in neat and systematic order. ______
2. Each tool or utensil is properly suspended. ______
3. The outline of each tool is clearly painted on the tool board. ______
4. Tools are in good working condition. ______
5. Tool board or cabinet has an attractive appearance. ______
6. There is a system for checking the tool board at the end of each work period to insure that all tools are returned. ______
7. Students clean each tool before hanging it on the tool board. ______
8. Students have a craftsman's respect for the tools they use. ______
9. Tool board is located so the tools are readily accessible to students. ______
10. There are enough tools for students so they are not handicapped in performing their work. ______
11. Each tool is etched or stamped with the name of the school. ______
12. There is a complete inventory of tools. ______

MACHINES

1. Machines are equipped with necessary safety guard. ______
2. There is a plan whereby each machine is periodically serviced. ______

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3. Stationary machines are arranged so there is no crowding or interference in their use. ______

4. Stationary machines are properly secured to the floor. ______

5. Danger areas are marked around each machine to restrict students from coming near a machine when it is in operation. ______

6. Machines are arranged so the instructor has a clear view of shop area at all times. ______

7. Machines are kept clean. ______

8. Machines are painted in accordance with good principles of color dynamics. ______

9. There is proper storage area for all portable machines. ______

10. Machines are in good working order. ______

11. Students display good safety habits in using machines. ______

12. There is a master safety switch that controls all machines. ______

13. There is a means for securing the safety switch when you leave the shop. ______

14. Students are properly attired when using machines. ______

15. Light is adequate around each machine. ______

16. Stationary machines are permanently wired so it is not necessary to plug them into outlets. ______

17. There is a complete inventory of all machines, tools, equipment, and material. ______

STORAGE

1. There is adequate facilities for storing supplies. ______

2. Supplies are neatly stacked. ______

3. Supplies are properly labeled so they are readily accessible. ______

4. There is a system for the control of supplies to prevent waste. ______

5. There is a system whereby a running inventory is kept. ______
6. Supplies are adequate. ______
7. Students are instructed on the importance of using supplies judiciously and conservatively. ______
8. There are shelves, bins, containers, etc. to house all items of supplies. ______
9. Supply room or cabinet is clean and free from all extraneous or miscellaneous odds and ends. ______
10. There is a storage area where students may keep their work or work projects. ______
11. There are adequate means for storing inflammable materials. ______

SHOP AREA

1. The tops of benches are in good shape. ______
2. When not is use, the tops of benches are free from dirt and miscellaneous odds and ends. ______
3. The vises on the benches are in good working order. ______
4. Benches are arranged to permit students to work without interference. ______
5. "Odds and ends" are not allowed to accumulate on window shelves, corner of shop, underneath benches, etc. ______
6. There is sufficient light over work benches. ______
7. There is an area for assembling large projects. ______
8. There is a properly-equipped planning area. ______
9. There is a means for removing unhealthy or noxious dust and fumes. ______
10. There is an adequate supply of fire extinguishers. ______
11. The fire extinguishers are located so they are readily accessible. ______
12. Fire extinguishers are checked periodically. ______

13. There is an adequate means for controlling the temperature of the shop. ______

14. Benches, cabinets, walls etc. are painted according to good color-dynamics of principles. ______

15. The general appearance of the shop is pleasing and attractive. ______

16. The multi-activity type shop has the various areas attractively marked. ______

17. There is a system whereby each student has a definite clean-up assignment at the end of each work period. ______

18. There is a plan whereby all students participate in a general shop cleaning at least once a week. ______

19. There is an organized plan for attractively displaying student's work, charts, and notices. ______

20. The floor area is kept free from objects which may be hazardous. ______

21. There are sufficient containers for scrap materials. ______

22. There are provisions for disposing of inflammable waste materials in properly closed metal containers. ______

INSTRUCTIONS

1. Students are not permitted to operate power machines and tools before receiving proper instructions. ______

2. Students must pass safety tests before operating power machines or tools, or performing difficult jobs. ______

3. Students are not permitted to work in the shop without passing a general shop safety test. ______

4. Students are taught to use fire fighting equipment and devices. ______

5. Students are taught how to handle different types of flammable materials and fires. Students are taught how to fill out accident reports. ______

6. Students are required to learn basic first aid. ______

7. Related instruction classes are held regularly for information needed to develop a good beginning tradesman. ______

CLASSROOM AREA

1. The desk, chairs, and table are properly arranged. ______
2. The teachers desk is not cluttered with old papers and junk. ______
3. There is a file cabinet for paper work. ______
4. There are adequate visual aids for instructional purposes.______
5. There is a place for books and other instructional materials. ______
6. There are adequate study guides and reference materials for each occupational area represented. ______
7. There is a system of keeping the reference materials and guides in a logical order. ______
8. There is evidence that instructional materials are being used at regular and frequent intervals and that the completed assignments are being conscientiously checked. ______
9. Student progress records are kept and are up-to-date. ______

EVALUATION SCALE

Total Points	Rating
300-310	Outstanding
280-300	Very Good - Some Improvement Needed
240-280	Just Satisfactory - Shop Needs Considerable Attention
180-240	Poor

C1

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REPORT OF SECOND ANNUAL WORKSHOP FOR COORDINATED VOCATIONAL-ACADEMIC EDUCATION

UNIT FIVE: Behavioral Analysis and Guidance

THE TEXAS VOCATIONAL PROGRAM FOR STUDENTS WITH SPECIAL LEARNING NEEDS

C.V.A.E.

Brownwood, Texas July 29—August 2, 1968

VT007684

TEXAS EDUCATION AGENCY
DEPARTMENT OF VOCATIONAL EDUCATION
AUSTIN, TEXAS

Second Annual Workshop
for
Coordinated Vocational-Academic Education Teachers

July 29-August 2, 1968

Brownwood, Texas

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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UNIT FIVE: Course Objectives, Outlines and Instructional Materials for BEHAVIORAL ANALYSIS AND GUIDANCE

Fifth of a Seven-Unit Muster comprising the Total CVAE Workshop Report.

TEXAS EDUCATION AGENCY

Department of Vocational Education
Coordinated Vocational-Academic Education

AUSTIN, TEXAS

COURSE OBJECTIVES

BEHAVIORAL ANALYSIS AND GUIDANCE

Objectives of the Course

1. To introduce the teacher to the basic principles of behavioral science and guidance with special emphasis on the problems of students with special learning needs.

2. To acquaint the teacher with the meaning and proper counseling and guidance.

3. To survey the tools and techniques of guidance.

4. To develop understanding of the individual differences of adolescent.

5. To emphasize the characteristics of Slow Learners - Physical, Mental and Emotional.

6. To understand the process of development of human behavior.

7. To aid the teacher to some extent become a practicing phycologist - in the sense of becoming a student of human behavior.

COURSE OUTLINE

COORDINATED VOCATIONAL-ACADEMIC EDUCATION (CVAE)
Brownwood, Texas Workshop

Course Outline
BEHAVIORAL ANALYSIS AND GUIDANCE

This is an introductory course in behavioral analysis and guidance with special emphasis on the problems of students with special learning needs. Basic principles of behavioral science and guidance are presented, along with a survey of the tools and techniques of guidance.

- I. Introduction
    - A. Historical Background (Succinctly)
        - 1. The factors influencing the development of guidance
        - 2. The precorsors of guidance
        - 3. Later influences on the development of guidance in the schools
            - a. World War I
            - b. The Depression
            - c. World War II
            - d. The George-Barden Act
            - e. The Minimum Foundation Program in Texas
    - B. Meaning and Scope of Counseling and Guidance
        - 1. Definitions of terms
        - 2. Guidance services in schools
        - 3. The teacher's role in the guidance program

- II. The Services of Guidance
    - A. The Individual Inventory
        - 1. Types and uses of cumulative record
    - B. The Testing Program
        - 1. Kinds of Tests
            - a. Diagnostic Tests
            - b. Prognostic Tests
            - c. Interest Inventories
            - d. Achievement Tests
            - e. Personality Inventories
            - f. Special Aptitude Tests
            - g. Attitude Tests
            - h. Intelligence Tests

        - 2. Uses and Misuses of Standardized Tests
        - 3. The State Testing Program
        - 4. Observation Techniques
            - a. Anecdoted Records
            - b. Self-evaluations
        - 5. Sociometric Techniques
            - a. The sociogram
            - b. The sociodrama
        - 6. The Case Study

- C. The Counseling Service
  - 1. Personnel involved
    - a. The role of the teacher
    - b. The role of the counselor
    - c. The psychologist and other specialists
  - 2. Counseling
    - a. Definition of Discussion
  - 3. Counseling Approaches
    - a. Clinical counseling: Directive
    - b. Client-centered counseling: Non-Directive
    - c. Eclectic counseling
  - 4. The Interview
    - a. Rapport
    - b. Interview techniques
    - c. Termination

III. Courses of Behavior
- A. External
- B. Internal

IV. The Teacher as a Psychologist
- A. Ways in Which Individuals Differ
  - 1. Mental
  - 2. Physical
  - 3. Environmental
  - 4. Cultural
  - 5. Emotional
- B. What to do about differences

V. Attitudes
- A. Definition
- B. Characteristics
- C. Formation
- D. Intensity
- E. Emotion and Hostility
- F. Developing Healthy Attitudes

VI. Adjustment Mechanisms
- A. Rationalization
- B. Displaced Hostility
- C. Self-Punishment
- D. Repression
- E. Conformity
- F. Projection
- G. Daydreaming and Fantasy
- H. Regression

VII. Characteristics of Slow Learners
- A. Physical

- B. Mental
- C. Emotional

VIII. Practical Aspects
- A. Classroom Management
  1. Classroom Environment
  2. Motivation
  3. Classroom Procedure
  4. Discipline
  5. Human Relations

IX. Final Examination

INSTRUCTIONAL MATERIALS

SOMETHING TO THINK ABOUT

"Man is a Tool-using animal. Weak in himself, and of small stature, he stands on a basis, at most for the flattest-soled, of some half-square foot, insecurely enough; has to straddle out his legs, lest the very wind supplant him. Feeblest of bipods! Three quintals are a crushing load for him; the steer of the meadow tosses him aloft, like a waste rag. Nevertheless, he can use Tools, can devise Tools; with those the granite mountain melts into light dust before him; he kneads glowing iron, as if it were soft paste: seas are his smooth highway, winds and fire his unwearing steeds. Nowhere do you find him without Tools: without Tools he is nothing, with Tools he is all."

———Thomas Carlyle
(1795-1881)
Scottish Essayist and
Historian

"We are always in these days endeavering to separate intellect and manual labor; we want one man to be always thinking, and another to be always working, and we call one a gentleman, and the other an operative; whereas, the workman ought often to be thinking, and thinker ought often to be working, and both should be gentlemen in the best sense. As it is, we make both ungentle, the one envying, the other despising his brother; and the mass of society is made up of morbid thinkers and miserable workers."

———John Ruskin
(1819-1900)
English Author, Art Critic,
and Social Reformer

TEST IQA

1. Read everything before doing anything.
2. Put your name in the upper right hand corner of this paper.
3. Circle the work "name" in sentence two.
4. Draw five small squares in the upper left hand corner of this paper.
5. Put an "X" in each square.
6. Put a circle around each square.
7. Sign your name under the title.
8. After the title write "Yes, Yes, Yes."
9. Put a circle around each word in sentence No. 7.
10. Put an "X" in the lower left hand corner of this paper.
11. Draw a triangle around the "X" you just put down.
12. On the reverse side of this paper multiply 703 by 9850.
13. Draw a rectangle around the word "paper" in sentence No. 4.
14. Call out your first name when you get to this point in the test.
15. If you think you have followed directions up to this point call out, "I have."
16. On the reverse side of this paper add 8950 and 9850.
17. Put a circle around your answer. Put a square around the circle.
18. Count out loud in your normal voice backwards from 10 to one.
19. Now that you have finished reading carefully, do only sentence one and two.

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CARDINAL PRINCIPLES OF SECONDARY EDUCATION[1]

1. Health
2. Command of fundamental processes
3. Worthy home-membership
4. Vocation
5. Citizenship
6. Worthy use of leisure time
7. Ethical character

IMPERATIVE NEEDS OF YOUTH[2]

1. All youth need to develop saleable skills and those understandings and attitudes that make the worker an intelligent and productive participant in economic life. To this end, most youth need supervised work experience as well as education in the skills and knowledge of their occupations.

2. All youth need to develop and maintain good health and physical fitness.

3. All youth need to understand the rights and duties of a citizen of a democratic society, and to be diligent and competent in the performance of their obligations as members of the community and citizens of the state and nation, and of the world.

4. All youth need to understand the significance of the family for the individual and society and the conditions conducive to successful family life.

5. All youth need to know how to purchase and use goods and services intelligently, understanding both the values received by the consumer and the economic consequences of their acts.

6. All youth need to understand the methods of science, the influence of science on human life, and the main scientific facts concerning the nature of the world and of man.

7. All youth need opportunities to develop their capacities to appreciate beauty in literature, art, music, and nature.

8. All youth need to be able to use their leisure time well and to budget it wisely, balancing activities that yield satisfaction to the individual with those that are socially useful.

9. All youth need to develop respect for other persons, to grow in their work cooperatively with others.

10. All youth need to grow in their ability to think rationally, to express their thoughts clearly, and to read and listen with understanding.

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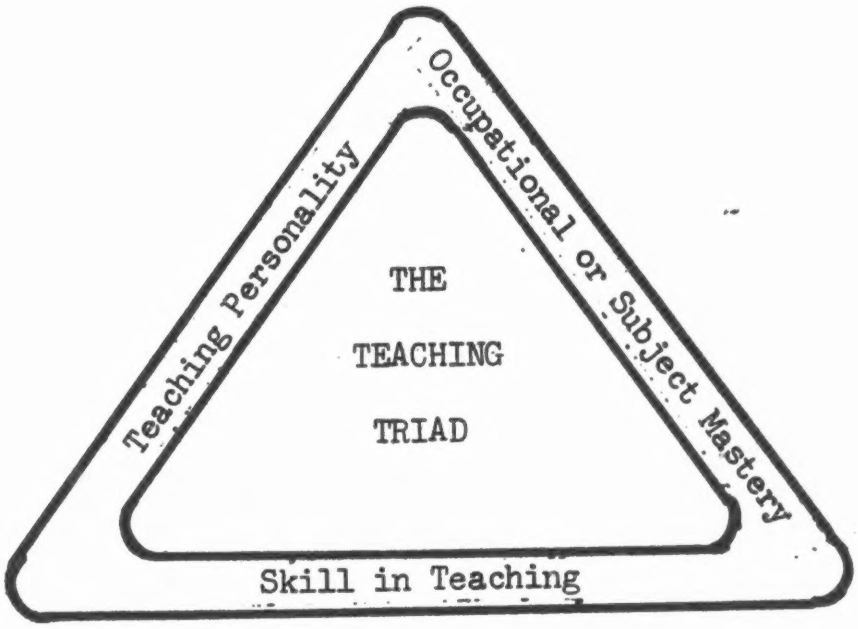
[1] CARDINAL PRINCIPLES OF SECONDARY EDUCATION, U. S. Office of Education Bulletin No. 35, pp 10-11, Government Printing Office, 1918.

[2] "The Imperative Needs of Youth of Secondary School Age," BULLETIN OF THE NATIONAL ASSOCIATION OF SECONDARY SCHOOL PRINCIPALS, March, 1947.

THE TEACHER AS A PSYCHOLOGIST

I. There are three areas in which effective teachers must be competent. They might be described as the teaching triad.



II. What is teaching?

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III. The teacher as a psychologist:

A. In what ways do individuals differ?

1.

2.

3.

4.

5.

IV. What to do about differences:

SUMMARY

GLOSSARY

Environment - surroundings; the aggregate of social and cultural conditions that influence the life of an individual.

Culture - behavior typical of a group or class (the act of developing the intellectual and moral faculties especially by education).

Physiology - a branch of biology dealing with the processes, activities, and phenomena incidental to and characteristic of life or living matter.

Emotion - a state of feeling; (derived from emouvoir - to stir up).

Intelligence - the capacity to apprehend facts and propositions and their relations and to reason about them.

Morale - a state of individual psychological well-being based on such factors as a sense of purpose and confidence in the future; a sense of common purpose with respect to a group.

Peer - one that is of equal standing with another.

Adolescence - the state or process of growing up; the period of life from puberty to maturity terminating legally at the age of majority. (majority--the age at which full civil rights are accorded--the age of 21).

COUNSELING PROCEDURES

I. Counseling (Definition)

Counseling provides a relationship in which the individual is stimulated (1) to evaluate himself and his opportunities, (2) to choose a feasible course of action, (3) to accept responsibility for his choice, and (4) to initiate a course of action in line with his choice.

II. Basic elements of a guidance program
  A. Services to pupils in group

  B. Services to pupils as individuals

  C. Services to the instructional staff

  D. Services to administration

  E. Research Services

III. The Teacher Counselor

IV. Three Schools of Counseling Thought
  A. Counselor-centered (Directive)

  B. Client-centered (Non-directive)

  C. Eclectic Counseling

V. Interview
   A. The fact-finding interview

   B. The counseling interview

   C. A get-acquainted interview

VI. Interview Technique

VII. Ethical Consideration in Counseling

VIII. Referring

BUILDING HEALTHY ATTITUDES

Utilize Full Range of Learning Aids to Reinforce Desired Attitudes

Well-planned bulletin boards and room displays can be effective tools of propaganda. Indoctrination can be deliberately plugged from every side. The youngsters can be bombarded with slogans: "You can be better off than you are;" "Work to Earn." The volume cannot be too great. With every tool and every technique at the teacher's command he should promote positive job attitudes.

We have made no effort here to prepare a complete list of attitudes that contribute to employability. The list might well be endless. For a class of slow learners a teacher might try to assign at least one desirable trait to each letter of the alphabet, making an ABC of good attitudes. Such an employability alphabet might look like this:

A Appearance--pleasing to self and to others

B Belonging--to a work group, gaining identity

C Concept--healthy, realistic view of self

D Desire--to work, to achieve

E Easy--to work with

F Faithful--to ideals and to trust

G Get up and go--eagerness, ambition

H Harmonious--working relationships

I Independence--"I am my own man (or woman)"

J Judgment--in making decisions

K Kindness--to oneself and to fellowman

L Learn--at work, at play, with people

M Manners--appropriate for the occasion

N Neatness--in appearance and performance

O Openness--to directions and suggestions

P Punctuality--no quality is more basic

Q Quickness and quietness--the Q-some twosome

R Responsible--you can depend on me

S Safety--coupled with self-confidence

T Task completion--tenacity

U Understand--whap is expected

V Vigor--goes well with anything

W Work well--do your best always

X X-cellence--something to shoot for

Y Yak less--put mind in gear before engaging mouth

Z Zeal for life--and work

GROWING FROM INFANCY TO ADULTHOOD

All children pass through a series of well-defined stages, each with its typical patterns of behavior.

The teacher who knows the changing characteristics of growing children is able to help them with social as well as intellectual adjustments.

The Six Stages

1. Babyhood Through the Fifth Year (Through Kindergarten)
   They progress from the complete dependence of early infancy through the uninhibited twos, the more orderly threes, the vigorous, socially-curious fours, and the more cooperative fives.

2. Early Childhood, Ages 6, 7, and 8
   This is a period of steady growth (orientation of the child at age six is still toward the parent and the teachers. At eight, it is beginning to be toward his peers.)

3. Later Childhood, Ages 9, 10, and 11
   The rate of growth declines in the latter part of this period. This is a serene stage in most ways. By the end of later childhood the superiority of girls over boys in height becomes apparent.

4. Preadolescence, Ages 12 and 13
   This is the period of most rapid growth. The terminal of preadolescence is sometimes called puberty.

5. Early Adolescence, Ages 14, 15, and 16
   Mature sexual capacity and almost mature bodies require these youngsters to make difficult adjustments. They may be expected to behave as adults and then be treated like children. They are neither. They are absorbed in learning how to relate to their peers, and especially to the opposite sex. The kind of foundation built in the earlier years helps to determine whether adolescence brings severe frustration or satisfying development toward maturity.

6. Late Adolescence, 17 through 20

They move out on widely separated paths. Some are already carrying the responsibilities of maturity. Others at the end of this period will for various reasons still not be ready for full adulthood.

WHAT IT MEANS TO "UNDERSTAND" A CHILD

The perfect teacher (or the kind of attitude, knowledge, and habit believed to characterize teachers who "understand" children):

1. Teachers who understand children think of their behavior as being caused. They see a youngster's present actions as based upon his past experience, as shaped by his present situation, and as influenced by his desires and hopes for the future.
2. A second characteristic of teachers who understand children is that they are able to accept all children emotionally, and to respect and value him as a human being.
3. They recognize that every child is unique and therefore, they constantly seek information about each of their pupils that will enable them to know the factors that are influencing their development and behavior.
4. They know the common developmental tasks that all children face during the several phases of their growth.
5. They know the more important generalizations that describe and explain human growth, development, motivation, learning, and behavior.
6. They are accustomed to methods of gathering and organizing relevant information about a child and to use this pertinent data as the basis for helping the youngster meet his problems of growing up.

PROBLEM BEHAVIOR

I. Learning

As teachers carry out the functions of their professional role, their chief concern is to promote, stimulate, and guide learning.

II. Behavior (Definition)

A. "In-side forces"

B. "Out-side forces"

III. The Attainment of Competence

A. Maintenance

B. Enhancement

C. The Basic Human Needs

1. Bodily Needs

2. Personal Needs

3. Self-punishment

4. Repression

5. Conformity

6. Projection

7. Daydreaming and Fantasy

8. Regression

B. Compulsiveness

C. What lies behind the anxiety that produces the behavior mechanism?

1. Conflict

2. Social-class Background

3. Adolescent Rebelliousness

4. Discouragement

3. Social Needs

4. Intellectual Needs

5. The Nature of Anxiety

V. Problem Behavior

A. Twenty Most Serious Behavior Problems of Children

B. The Six Most Common Problems

VI. Dealing with Problem Behavior

VII. Anxiety as a Basis for Emotional Problems

A. Behavior Mechanisms

1. Rationalization

2. Displaced Hostility

5. School Policies and Conditions:

VIII. Summary

DISCIPLINE

I. We need to be aware of and sensitive to our students' wants.

1. Teen-agers want to be accepted.

2. They want fair treatment.

3. They want a feeling of success.

4. They want independence in making decisions.

5. They want adult sympathetic understanding.

6. They want adult companionship.

II. Six postulates to follow: Let these postulates follow you into the classroom the first week of school, the first month, and the months that follow:

1. Let no paper curtain fall between you and your pupils. Get to know them intimately, but do not behave so that familiarity breeds respect.
2. Give children your love, attention, and concern. But manage to continue being your own human self.
3. Strive for depth and thoroughness when planning lessons. It's more important to cultivate the ground than merely to cover it.
4. Don't be ashamed of your ignorance nor fear your weakness even in the subjects you have been assigned to teach. Fear only the satisfaction that comes with routine and be ashamed only of creeping lethargy.
5. Seize the young and excited mind; don't let go until your own mind is equally excited with or about the ideas and projects which concern the pupil.
6. Praise is better than blame, activity better than passivity, involvement better than isolation, teaching better than punishing. And if you have to punish, don't devise outlandish methods. Forcing children to crouch under desks, for example, is humiliating for the pupil, degrading for the teacher.

III. Ten techniques for maintaining good discipline.
Discipline is more than keeping order.
Good discipline is more than keeping order in the classroom.
Its ultimate goal is to help children develop self-control, self-respect, and respect for property and people around them.
Here are ten techniques which may help:

1. Make your classroom activities interesting, meaningful,

and vital.

2. Know your subject, but don't expect your pupils to know all that you know.
3. Know and practice the fundamentals of classroom management: satisfactory seating, quick checking of attendance, promptness in beginning the work, being on time yourself, well-adjusted lighting and ventilation. Use student help whenever possible.
4. Learn the pupil's problems. It may be more important to you and to the child to "find out something" than to do "something."
5. Know your pupil's backgrounds, interests, abilities, needs, and achievements.
6. Hold to "standards", which pupils can meet.
7. Dress attractively and neatly, but not glamorously.
8. Know your pupils' names. Know "How to Win Friends and Influence People."
9. Be willing to apologize to a pupil if you find that you have treated him unfairly. Don't try to "cover up" in order to "save face." A teacher loses nothing by admitting his error.
10. Control your temper and your voice.

SUGGESTIONS FOR HANDLING TROUBLESOME STUDENTS

	Symptoms												
Corrective Actions	1. Learns Slowly	2. Thinks He Knows It All	3. Seems Overly Timid	4. Wastes Time	5. Seems Overly Aggressive	6. Appears Antagonistic	7. Learns Rapidly	8. Finds Fault	9. Likes to Rough House	10. Courts Undue Favors	11. Stalls or Procrastinates	12. Tries to Dominate	13. Fails to Pay Attention
1. Provide less work.													
2. Provide more work.													
3. Give more individual instruction.													
4. Be patient in correcting mistakes.													
5. Give no chance to dodge responsibility.													
6. Rigidly check student's work.													
7. Let student know what is expected of him.													
8. Determine validity of grievances.													
9. Change group with which student is working.													
10. Give student more responsibility													
11. Give more difficult assignments.													
12. Require student to prove ability													
13. Have student work alone.													
14. Have student work with others.													
15. Keep student informed of his progress													
16. Tell student why record is poor.													
17. Check irregularities at first occurrence													
18. Have personal talk with student.													

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WHY LEARNERS BEHAVE AS THEY DO

I. All behavior is caused:

II. Some causes are "external":

III. Some causes are "internal":

IV. People react differently:

V. An attitude is a "readiness to react":

VI. Attitudes are learned:

VII. Attitude formations begin early:

VIII. Attitudes are directed:

IX. Attitudes vary in intensity:

X. Threats can be real or imaginary:

XI. Attitudes are affected by emotion:

XII. Different people have different attitudes:

XIII. Knowledge comes through understanding:

XIV. People depend on one another:

XV. Employees have responsibilities:

XVI. Communication eases hostility:

XVII. Deal with the supervisor:

SUMMARY

1. All behavior is caused.

2. Behavior results from attitudes that:
   a. are learned
   b. are directed toward something
   c. vary in intensity
   d. are affected by emotion

3. No two people have the same combination of attitudes.

4. People depend on one another.

5. Employees have responsibilities to the people with whom and for whom they work.

6. Hostile attitudes are maintained through lack of communication.

7. It is better to deal with the supervisor wherever possible before considering further action.

Now that we have reviewed these basic points for you, I am going to give you a number of "cases" or "problem situations". I believe that underlying each of these situations is one or more of the seven points. Work through these illustrations with these points in mind and answer the discussion questions that follow each illustration.

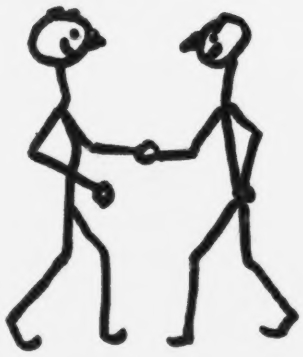
HOW TO GET ALONG WITH FELLOW WORKERS (Students)
(Annotation Sheet)

I. Introductory Statement

II. It is probably true that most people want to get along well with others, but that many of us do not know how. Here are a few questions to ask yourself:

1. Are you willing to help the other fellow?

2. Are you willing to go half way to be friendly?



3. Do you show annoyance on slight provocation?

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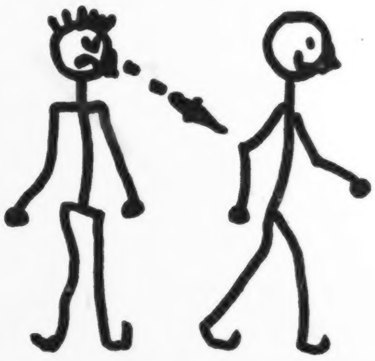
4. Do you try to be fair?

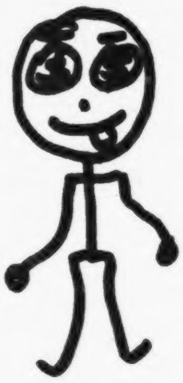
5. Do you bear grudges?



6. Are you willing to give the other fellow the benefit of the doubt, if you suspect his motives?

7. Do you try to talk more about the good than the bad qualities of others?

8. Do you think only of your own interests?



9. Do you take yourself or your work too seriously?

10. How much do you value your integrity?

Friendliness

1. Do you like to cheer up people who have had bad luck? yes no

2. Do you enjoy sentimental music? yes no

3. Are you genuinely pleased to see people who have been away for a couple of weeks? yes no

4. Do you want to be with people most of the time? yes no

5. Are you as cordial in greeting casual acquaintances as you are to close friends? yes no

6. Do you get excited at movies that deal with people's troubles, although you know everything will come out all right in the last reel? yes no

7. Would you like to help people along with their love affairs? yes no

8. Do you like to listen to people talk about little things? yes no

9. Do you have many speaking acquaintances and friends? yes no

10. Are you usually enthusiastic about something? yes no

11. When you like a person, do you show your likes without embarrassment? yes no

12. Do you like to tell people compliments and "nice things?" yes no

13. Do you smile most of the time? yes no

14. Do you enjoy being with children? yes no

15. Do you smile when speaking to strangers or sales-clerks? yes no

Getting Along With People

1. Have you ever been chairman of some group? yes no
2. Do you hesitate about introducing people to each other? yes no
3. Are you self-conscious when trying to get someone to talk? yes no
4. Is it hard to think of things to say to others? yes no
5. Are you shy? yes no
6. Do you usually let someone else liven up a party? yes no
7. Would you rather write for a favor than ask a person? yes no
8. Are you ill at ease when entering a crowded room? yes no
9. Do you dislike talking before a group or audience? yes no
10. Do you keep from talking so that you will not say the wrong things? yes no
11. Do you dislike sitting up front at meetings? yes no
12. Do you try to avoid meeting important people at meetings? yes no
13. Are you slow about making friends? yes no
14. Do you try to be inconspicuous at a party? yes no
15. Are you self-conscious around people you do not know very well? yes no
16. Do you have a few close friends rather than many acquaintances? yes no
17. Do you sometimes go out of your way to avoid meeting people? yes no
18. Do you dislike dancing? yes no
19. Are you embarrassed when you leave a group? yes no
20. Do you avoid parties and celebrations where a crowd is present? yes no

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NEGATIVE FACTORS EVALUATED DURING THE EMPLOYMENT INTERVIEW AND WHICH FREQUENTLY LEAD TO REJECTION OF THE APPLICANT, AS REPORTED BY 153 COMPANIES

1. Poor personal appearance.

2. Overbearing - overagressive - conceited "superiority complex" - know-it-all.

3. Inability to express himself clearly - poor voice, diction, grammar.

4. Lack of planning for career - no purposes or goals.

5. Lack of interest and enthusiasm - passive, indifferent.

6. Lack of confidence and poise - nervousness, ill-at ease.

7. Failure to participate in activities.

8. Overemphasis on money - interested only in best dollar offer.

9. Poor scholastic record - just got by.

10. Unwilling to start at the bottom - expects too much too soon.

11. Makes excuses - evasiveness - hedges on unfavorable factors in record.

12. Lack of tact.

13. Lack of maturity.

14. Lack of courtesy - ill mannered.

15. Condemnation of past employers.

16. Lack of social understanding.

17. Marked dislike for school work.

18. Lack of vitality.

19. Fails to look interviewer in the eye.

20. Limp, fishy hand-shake.

21. Indecision.

22. Loafs during vacations.

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23. Unhappy married life.

24. Friction with parents.

25. Merely shopping around.

26. Sloppy application blank.

27. Wants job only for short time.

28. Little sense of humor.

29. Lack of knowledge of field of specialization.

30. Parents make decisions for him.

31. No interest in company or in industry.

32. Emphasis on whom he knows.

33. Unwillingness to go where we send him.

34. Cynical.

35. Low moral standards.

36. Lazy.

37. Intolerant - strong prejudices.

38. Narrow interests.

39. Spends much time in movies.

40. Poor handling of personal finances.

41. No interest in community activities.

42. Inability to take criticism.

43. Lack of appreciation of the value of experience.

44. Radical ideas.

45. Late to interview without good reason.

46. Never heard of company.

47. Failure to express appreciation for interviewer's time.

48. Asks no questions about the job.

49. High pressure type.

OUTLINE FOR THE STUDY OF AN OCCUPATION

I. General statement concerning the vocation:
  1. Value of the vocation as a social service.
  2. Duties of one engaged in it.
  3. Number engaged in it in local community.
  4. Relative number engaged in it, in general, with its probable future development.
  5. Relative capital invested in it.

II. Personal qualities demanded:
  1. Qualities of manner, temperament, character.
  2. Mental characteristics.
  3. Physical demands.

III. Preparation required:
  1. General education.
  2. Special or vocational education.
  3. Apprenticeship conditions.
  4. Experience required.

IV. Wages earned by workers:
  1. Range of wages made (table showing distribution of cases).
  2. Average wage per week.
  3. Relation of wage to length of experience and preparation.

V. Length of working season, working week, working day.

VI. Health of the workers:
  1. Healthful or unhealthful conditions.
  2. Dangers, accidents, or risks.

VII. Opportunities for employment:
  1. In local community.
  2. In general.

VIII. Organization of the industry, including the relations of the worker to his fellow workers, his employers, and to the community.

IX. Status of workers:
  1. Opportunities for advancement.
  2. Time for recreation and enjoyment.
  3. Adequate income for recreation and the comforts of life.
  4. Any other items of particular interest in this connection.

X. Biographies of leaders in the vocation.

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REPORT OF SECOND ANNUAL WORKSHOP FOR COORDINATED VOCATIONAL-ACADEMIC EDUCATION

UNIT SIX: Implementation of Instructional Material

THE TEXAS VOCATIONAL PROGRAM FOR STUDENTS WITH SPECIAL LEARNING NEEDS

C.V.A.E.

Brownwood, Texas July 29—August 2, 1968

VT007684

TEXAS EDUCATION AGENCY
DEPARTMENT OF VOCATIONAL EDUCATION
AUSTIN, TEXAS

Second Annual Workshop
for
Coordinated Vocational-Academic Education Teachers

July 29-August 2, 1968

Brownwood, Texas

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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UNIT SIX: Course Objectives, Outlines and Instructional Materials for IMPLEMENTATION OF INSTRUCTIONAL MATERIAL

Sixth of a Seven-Unit Muster comprising the Total CVAE Workshop Report.

TEXAS EDUCATION AGENCY

Department of Vocational Education
Coordinated Vocational-Academic Education

AUSTIN, TEXAS

COURSE OBJECTIVES

IMPLEMENTATION OF INSTRUCTIONAL MATERIALS

Objectives of the Course

1. To develop a knowledge of how to secure, evaluate and use existing instructional material.
2. To develop skill in the preparation of instructional sheets to meet needs for which no other material is available.
3. To develop skill in using visual aids including films, models, mock-ups, charts, posters, chalkboards, etc.

COURSE OUTLINE

IMPLEMENTATION OF INSTRUCTIONAL MATERIALS

I. INTRODUCTION — 30 MINUTES
  A. OBJECTIVES
  B. DEFINITION OF INSTRUCTIONAL MEDIA

II. DETERMINING NEED FOR TEACHING AIDS — 1 HOUR
  A. TYPES OF LESSONS
  B. DIFFICULTY OF LESSON
  C. ABILITY OF LEARNER
  D. HOW PEOPLE LEARN (REVIEW)

III. TYPES OF VISUAL AIDS — 20 MINUTES
  A. PROJECTION AIDS
  B. AUDIO-AIDS
  C. VISUAL AIDS

IV. TEACHING WITH FILMS — 5 HOURS
  A. SELECTION AND EVALUATION
  B. PREVIEWING AND LESSON PLANNING
  C. 4 STEP PLAN WITH FILMS

V. MODELS, MOCK-UPS AND DEVICES — 5 HOURS
  A. ENLARGED MODELS
  B. REDUCED MODELS
  C. NORMAL EQUIPMENT
  D. CUT AWAYS
  E. SCHEMATICS

VI.	CHARTS, POSTERS AND CHALKBOARD	2 HOURS
	A. TYPES AND KINDS	
	B. PREPARATION AND PRESERVATION	
	C. PROPER USE AND FUNCTION	
	D. SIZE AND COLOR	
VII.	FINAL EXAMINATION	1 HOUR

INSTRUCTIONAL MATERIALS

ANALYSES AND COURSE MAKING

DEFINITIONS

ANALYSIS--Separation of anything into constituent parts or elements; an analysis clarifies rather than increases knowledge; also, an examination of anything to distinguish its component parts--Webster.

ANALYSIS, GRAPHICAL--The use of the graph as an aid in the discovery and portrayal of explicit and implicit relationships.

ANALYSIS, JOB--The determination of the skills and items of knowledge that a worker must possess in order to do a specific job, and the arranging of these in a logical teaching order.

ANALYSIS, OCCUPATIONAL--The determination of the duties, responsibilities, and items of knowledge that a worker must possess in order to do a certain type of work and the arranging of these in a logical order.

ANALYSIS, PROBLEM--The act of resolving a problem into its component parts and finding the relationships among the parts.

ANALYSIS, TRADE--A systematic listing of all the things that the learner of a trade must be taught if he is to become master of the complete trade.

BLOCK--A group of teaching jobs having a common set of learning difficulties.

BLOCK BASE--A source of learning difficulty (such as machine, material, operation, or type of construction) that is common to certain jobs in a trade and that forms a basis for considering such jobs as a natural group.

BLOCK, INDEPENDENT--A division of a trade or other occupation, as determined by analysis, that can be taught as a unit by itself.

BLOCK PROGRESSIVE METHOD--A learning order in which the learner masters the jobs in one block before starting those in another.

CHECKING LEVEL--(1) A designated point or stage in a course of study at which the instructor may measure the learner's achievement, to insure adequate testing without the necessity of each small unit of work. (2) A certain point of stage of a long or involved job at which a check is made for errors, the purpose being to have the student note and correct errors during the progress of the job.

COURSE, BASIC--A course that presents only the fundamental or essential subject matter in a subject field.

COURSE OUTLINE--(1) A sequential enumeration in condensed form of the main points and supporting details for the course of study. (2) A skeleton outline, or a brief plan, or a rough draft of the course of study.

COURSE OF STUDY--Strictly, an official guide prepared for use by administrators, supervisors, and teachers of a particular school system as an aid to teaching in a given subject or area of work for a given trade, combination of trades, or other designated class or instructional group; may include the aims of the course, the expected outcomes, and the scope and nature of the materials to be studied, with suggestions as to suitable instructional materials and aids, textbooks supplementary reading, teaching methods, measurement of achievement, and progress records.

COURSE, SHORT-UNIT--A course of study of relatively short duration organized for the purpose of achieving certain somewhat limited objectives, such as giving instruction in the operation of a particular machine.

COURSE, SUBJECT--A course in which instruction emphasized knowledge and understandings rather than skills, for example, history.

CUSTOM TRADES--Trades that are characterized by the fact that the work is done to order and that high degrees of judgment forming predominate. Examples: Tailoring, Carpentry, Painting, House Wiring.

JOB--(1) A task performed by a learner in order to develop skill or to "try out" the application of a principle. (2) A unit of a trade or task done by a worker in return for pay; an employment classification.

JOB SHEET--A written instruction sheet usually presenting directions, references, and questions designed to assist the learner in mastering an assigned job.

OCCUPATION--That which occupies or engages the time and attention; the principal business of one's life; vocation--Webster.

PRODUCTION JOB--A job that results in the working up of stock--Allen.

PROGRESSION FACTOR TABLE (HAYNES)

In establishing the order of learning difficulty in a trade, it is possible to use a table which takes into account certain elements or factors. A list of these factors is shown below. These factors have been taken from the book "Teaching Shop Work," by Merritt W. Haynes. Jobs which are predominately on the minimum side of the progression factor table are usually easier to do and for that reason should be taught first. The table suggests certain graduations which might be taken into account when arranging jobs in the best possible teaching order. When use of the progression table is recommended, the teacher trainer will give a complete explanation of the table itself and will illustrate its use and application.

FACTOR	MINIMUM	MAXIMUM
Speed	Very slow--slow--moderate--fast--rapid--swift A quantitative factor applied wherever time is an important consideration.	
Fear	Fearful--timid--cautious--confident Important where there is danger or hazard to the worker.	
Accuracy	Many errors--less errors--few errors--no errors A quantitative factor in simple, repetitive operations, such as feeding a printing press.	
Precision	Very coarse--coarse--approximate--fine--exact Applicable in a single job of large proportion or non-repetitive such as preparing make-ready and register at the press; laying out lines for electrical conduits, water pipes, etc.	
Number of successive motions	Single motion--few motions--many motions Applied to the complete cycle necessary for one repetitive job or operation. Example: setting a line of type either by hand or machine, or cutting a thread on a lathe.	
Number of simultaneous motions	Few--several--many Applied to the motions necessary at almost the same instant in any operation.	
Complexity	Simple--multiple--involved The number of factors or parts of a machine or stock to be considered in setting up, adjusting, or operating.	
Judgment	No alternatives--few alternatives--several alternatives--many alternatives The choice of action possible in any situation. The job with no alternatives is "fool proof," while the one with unlimited alternatives represents the highest type of craftsmanship.	

FACTOR	MINIMUM	MAXIMUM
Manipulation	Easy--less easy--difficult--very difficult The muscular coordination required in any operation. Examples: Card stock is relatively easy to manipulate, while tissue paper is difficult to handle.	
Workmanship	Rough--coarse--fair--fine--very fine--expert Qualities such as neatness, finish, etc., necessary in any job; the masterful touch that characterizes the skillful worker in any line.	
Visualization	All elements visible--many elements visible--few elements visible--no elements visible Ability to construct in advance a mental image of the completed job. Necessary in make-ready, imposition, and layout, for the printer, in constructing or reading working drawings in any trade.	
Color discrimination	Black and white--primary colors--hues and tones Applies in feeding a printing press, tempering steel, recognizing stock, etc.	
Touch discrimination	Rough--fine--delicate Applied in testing paper stock; in finishing surfaces in wood, metal, varnish, etc.	

Glossary of Terms

AIM (OR PURPOSE)--A goal or objective which has been defined so that it may be used as a guide for learners in directing activities and studies in a given lesson or instructional unit.

ANALYSIS--The breaking down of a whole into parts, showing the relationship of the parts to each other and to the whole itself.

ANALYSIS, BASIC--Basic analysis is the foundation for producing a job analysis.

ANALYSIS, GRAPHIC--The use of the graph as an aid in the discovery and portrayal of explicit and implicit relationships.

ANALYSIS, JOB--A detailed listing of duties, operations, and skills necessary to perform a clearly defined, specific job, organized into a logical sequence which may be used for teaching, employment, or classification purposes.

ANALYSIS, OCCUPATIONAL--The determination of the duties, responsibilities, and items of knowledge that a worker must possess in order to do a certain type of work and the arranging of these in a logical order.

ANALYSIS, PROBLEM--The act of resolving a problem into its component parts and finding the relationships among the parts.

ANALYSIS, TRADE--The procedure of breaking down a trade or occupation to determine the teachable content in terms of operations, tools, processes, and technical information to be organized into a course of study and arranged according to a sequence of difficulty.

APPLICATION STEP--The third step of the four-step lesson plan, as used by vocational industrial education instructors, in which the instructor directs the activity or gives the learners a chance to apply what they have learned in the presentation step of the lesson.

ASSIGNMENT SHEET--Directs the study to be done or assignment to be carried out by the student on the lesson topic, and may include questions to determine how well the lesson has been learned.

BIBLIOGRAPHY--The process of describing books correctly with respect to authorship, editions, physical form, publisher, price, and similar items.

BLOCK--A major division of a trade (or trade analysis) composed of jobs or operations having similar learning difficulty. A block of a trade may be thought of as a "lesser" trade within a trade. For example, machine composition is a trade within the printing trade.

BLOCK BASE--A source of learning difficulty (such as machine, material, operation, or type of construction) that is common to certain jobs in a trade and that forms a basis for considering such jobs as a natural group.

BLOCK, INDEPENDENT--A major division of a trade which may be learned without knowledge of the other blocks in the trade. For example, a person can learn platen presswork without necessarily having mastered the other divisions of the printing trade.

BLOCK PROGRESSION METHOD--See progression method, block.

CAUTIONS--Practices to be observed (applies to both persons and things).

CHECKING LEVEL--(1) A designated point or stage in a course of study at which the instructor may measure the learner's achievement, to insure adequate testing without the necessity of testing achievement, upon the completion of each small unit of work; (2) a certain point or stage of a long or involved job at which a check is made for errors, the purpose being to have the student note and correct errors during the progress of the job.

CLUSTER OF TRADES (sometimes called a FAMILY OF TRADES)--Several specific trades grouped together for instructional purposes in order to enhance possibilities of a trainee's getting placed on a job.

COURSE, BASIC--A course that presents only the fundamental or essential subject matter in a subject field.

COURSE OUTLINE--(1) A sequential enumeration in condensed form of the main points and supporting details for the course of study; (2) a skeleton outline, a brief plan, or a rough draft of the course of study.

COURSE OF STUDY--Strictly, an official guide prepared for use by administrators, supervisors, and teachers of a particular school system as an aid to teaching in a given subject or area of work for a given trade, combination of trades, or other designated class or instructional group; may include the objectives of the course, the expected outcomes, and the scope and nature of the shop or laboratory work, with suggestions as to suitable instructional materials and aids, textbooks, supplementary reading, teaching methods, measurement of achievement, and progress records.

COURSE, SHORT-UNIT--A course of study of relatively short duration organized for the purpose of achieving certain limited objectives, such as giving instruction in the operation of a particular machine.

CUBE MATRIX--A cubical array of symbols used to facilitate the analysis of interrelationships of sets of factors.

CURRICULUM--(1) A systematic group of courses or sequence of subjects required for graduation in a major field of study, such as industrial vocational education; (2) the general, overall subjects which a school offers the student.

CUSTODIAN--The caretaker of a school building or the person in charge of all school housekeeping duties.

CUSTOM TRADES--Trades that are characterized by the fact that the work is done to order and that high degrees of judgment-forming predominate. Examples are tailoring, carpentry, painting, and house wiring.

DIFFICULTY SCALE--(1) A series of tasks arranged in order of difficulty (or a series of tasks the difficulty of each of which is known) from which a selection may be made to prepare a test; (2) a list of jobs in a block, arranged in order from the easiest to the most difficult.

DUTY--That which is required by one's station or occupation; any assigned service or business.

DIG-U RELATIONSHIPS--Directly related to job being performed. Indirectly related to job being performed. Generally related to job being performed. Unrelated--not essential to complete job.

ELEMENTS--One of the substances or factors that make up a compound or complex thing.

EXAMINATION--(1) An appraisal of ability, achievement, or present status in any respect; (2) the instrument used in making such an appraisal.

EXPERIMENT SHEET-A format sheet organized with subject of the experiment, introductory information, equipment setup, the procedure, and space for the working diagram when needed. Spaces are also included for recording the data from the experiment and conclusions derived from the performance of the experiment.

FALSEWORK--Temporary construction work on which a main work is wholly or partly built and supported until it is made strong enough to support itself. A temporary framework used to support a part or all of a structure during demolition.

FEEDBACK--The process of transmitting information about the output back to the input for purposes of control (adjustment).

FOLLOW-UP--In step IV of the four-step lesson plan the process of observing and/or checking the progress of the student at work on the job that had been demonstrated by the instructor in step II of the manipulative skill lesson plan.

GUIDE SHEET, INSTRUCTOR'S--Ordinarily, when used, the instructor's guide sheet is prepared by a training specialist to assist others, usually beginning teachers, with suggestions for teaching an accompanying lesson.

INCIDENTAL INSTRUCTION--The teaching of certain related items or skills as the need for them occurs in connection with shop activities, as opposed to "formal" class instruction.

INFORMATION SHEET--Contains essential facts necessary for the understanding of an instructional unit which is largely informational in nature.

INSTRUCTIONAL AIDS--Instructional aids are those things which make the teaching of a particular lesson easier and more efficient. Included are textbooks, trade journals, manuals, charts, diagrams, models, movies, slides, and the like.

INSTRUCTIONAL SHEETS--Written teaching aids which contain organized material for the use of individual students. Four common types are (1) operation sheet--gives directions on how to perform a single manipulative task or operation; (2) job sheet--gives directions on how to do, completely and in proper sequence, a number of operations which make up a job; (3) information sheet--contains everything necessary for the understanding of an instructional unit which is largely informational in nature; and (4) assignment sheet--directs the study to be done by the student on the lesson topic and may include questions to determine how well the lesson has been learned.

JOB--(1) A task performed by a learner in order to develop skill or to "try out" the application of a principle; (2) a unit of trade or task done by a worker in return for pay; an employment classification.

JOB ANALYSIS--See analysis, job.

JOB BREAKDOWN SHEET--A sheet which provides space to break down a job or an operation into steps and key points. This sheet is used primarily by the instructor to assist in performing the job or operation in correct sequential order when demonstrating for learners. It also may be used to organize the steps and kep points on the operation sheet for student use.

JOB DESCRIPTION--A monograph, devoted to a particular occupation, in which pertinent information on the occupation is given, usually for guidance or classification purposes. The contents include a job summary, type of work done, physical and educational requirements, working conditions, and the usual methods of preparing for and entering the occupation.

JOB PLAN SHEET--A format sheet used by a trainee in a shop class to organize a job he proposes to work on. There are suitable spaces for the working drawing, for materials required, tools needed, procedure to follow, and spaces for instructor to check as the job advances.

JOB SHEET--A written instruction sheet usually presenting directions, procedures, and operations designed to assist the learner in mastering an assigned job.

JOURNEYMAN--A person who has gone through the stage of apprenticeship and has then been classified as a skilled mechanic.

KEY POINTS--Points of information concerning an operation which are critical enough to "make" or "break" the job in progress. They are the key to doing the job correctly, safely, efficiently, and accurately.

KEY FOR SCORING--An answer key or sheet containing correct answers to questions or problems used by the teacher in scoring or grading students' written work or tests.

LEARNING PSYCHOLOGY--Study of the nature of learning.

LESSON--A unit of learning containing new elements to be mastered successfully in order to progress toward a predetermined educational goal.

LESSON PLAN--An organized plan or procedure for teaching a complete lesson efficiently. Written lesson plans usually contain the following: name of training unit, subject of lesson, aim (or purpose) of the lesson, references, teaching aids, materials and tools needed, methods of motivating students, methods of presentation, key points, ways for students to apply the knowledge or skills received, and tests.

LEVEL OF PROFICIENCY--Degree of expertness with relation to performance.

MAINTENANCE--The keeping of buildings and equipment in repair; upkeep of property.

MECHANIC--One who practices any mechanical art; an artisan.

METHOD--An orderly procedure to direct learners in the development of habits and skills, acquiring knowledge, and developing wholesome attitudes.

OBJECTIVES--The ultimate goals in the development of skills, knowledge, attitudes, and appreciation to be reached through a particular instructional course. Objectives are, of course, usually broader and more all-inclusive than aims of a lesson.

OCCUPATION--That which occupies or engages time and attention; the principal business of one's life; vocation (Webster).

OCCUPATIONAL ANALYSIS--Synonym of job analysis (anything that a man is paid for doing). The basic method used to obtain salient facts about a job, involving observation of workers and conversations with those who know the job, in order to describe in detail the work involved, the conditions under which it must be performed, and the qualifications necessary for the worker who must perform it.

OCCUPATIONAL INFORMATION--Systematically organized data used by guidance personnel for the purpose of helping persons make a vocational choice. Material concerns the nature of the work, duties, responsibilities, and compensations involved in the several vocations, including information about employment outlook, promotional opportunities, and entrance requirements.

OPERATION--(1) A process; (2) the major subdivisions in the breakdown of a job; (3) a unit of work or activity in which the materials of the job are processed in such a way as to alter their shape, appearance, or character.

OPERATION SHEET--An instructional sheet which contains all the directions needed to perform a given operation, including procedures, steps, key points, illustrations, and the like.

PERFORMANCE--Actual accomplishment as distinguished from potential ability, capacity, or aptitude.

PERSONAL SERVICE TRADE--Any occupation that has as its primary purpose the rendering of personal service to the customer, patron, or patient.

PRECAUTIONS--Care taken in advance to prevent harm to tools, materials, supplies, and equipment in the work area.

PREPARATION--The first step of the four-step lesson plan, as used by vocational industrial education instructors, in which the instructor motivates the subject and otherwise makes an introduction of the material that will be covered in the lesson. It is also appropriate in this step to indicate to the learner what he is expected to learn, and how he will be tested.

PRESENTATION--The second step of the four-step lesson plan, as used by vocational industrial education instructors, in which the instructor presents the teaching points of the lesson or follows his job breakdown sheet as he makes his demonstration. All new content pertaining to the lesson or job should be presented in step II.

PROCESS--A series of actions or operations resulting in the production of goods.

PRODUCTION JOB--A job in which something is manufactured or produced from standard stock and materials according to commercial procedures and standards.

PROGRESS CHART--A chart containing a list of all of the jobs, operations, or other instructional units contained in a given course outline or course of study used in determining the progress of individual students throughout a prescribed training program.

PROGRESSION FACTORS--Influences, conditions, or difficulties which must be recognized in the selection and placing of jobs or lessons in best teaching order. Typical progression factors are complexity of operations, hazards, trade judgment required, technical knowledge required, and speed of operation.

PROGRESSION METHOD, BLOCK--A learning order in which the learner masters the jobs in one block before starting those in another.

PROGRESSION METHOD, SPIRAL--An order of job instruction in which all jobs having the lowest level of difficulty in two or more blocks are taught; then all those jobs having the next higher level of difficulty are taught, and so on until all the jobs in all the blocks have been taught.

PROJECT--An article, activity, investigation, or problem chosen by or assigned to a student. The student is assisted by the teacher in its planning and completion; a term used in industrial arts.

REFERENCES--A list of all the printed matter that is to be used by the student in completing an assignment, such as books, trade literature, charts, information sheets, and the like.

RELATED INFORMATION--That information which must be known in order to perform manipulative work intelligently. There are several kinds, for example, general, technical, socioeconomic, safety, and occupational.

RELATED INFORMATION WORK SHEET--A sheet used or organize the teaching points and notes for the lesson content for a related theory or technical information lesson.

RELATED SUBJECTS--Subjects which provide instruction in those aspects of mathematics, science, hygiene, drawing, economics, law, art, and other fields as they apply to a particular trade or occupation.

RESPONSIBILITY--A duty or task laid upon a person; charge or obligation.

SAFETY--Involves correct human behavior. Pertains to the physical welfare of the worker, his co-workers, and other persons in the work area.

SERVICE JOB--A job that makes the getting out of production easier, cheaper, or more rapid (Allen).

SERVICE OCCUPATIONS--Those occupations which have as their primary purpose the rendering of personal service to the customer or maintenance of existing equipment.

SERVICE TRADE--Any occupation that has as its primary purpose the maintenance of existing equipment. Upon occasion this activity may involve the repair, overhaul, or installation of machines.

SKILL--(1) Anything that the individual has learned to do with ease and precision; (2) usually considered a physical performance, developed by students in vocational industrial education through the meaningful repetition of an operation or a manipulative procedure.

SPECIFIC JOBS, OR REAL JOBS--Actual jobs that approximate type jobs in their characteristics as determined from the difficulty scale.

STANDARD--Any criterion by which things are judged.

STEP--A logical segment in the breakdown of a job or operation when something happens to advance the work.

STUDY GUIDE--A set of printed or duplicated directions or questions for the use of individual students in a supervised study procedure.

STUDENT WORKBOOK--A study or learning guide for class members, often related to a particular textbook or to several textbooks; may contain exercises, problems, practice materials, directions for use, space for recording answers, and means for evaluating the work done.

SUPERVISOR--One who controls jobs and has knowledge of standards.

SYLLABUS--A consensed outline or statement of the main points of a course of study, books, or other documents.

SYSTEM--The structure or organization of an orderly whole, clearly showing the interrelations and interactions of the parts to each other and to the whole itself.

TASK--A piece of work, usually assigned, often to be finished within a certain time.

TEACHING AID--An auxiliary instructional device, such as a chart, drawing, picture, film, mock-up, or a working model, intended to facilitate learning.

TECHNICAL JOB--A job that does not result in the working up of stock but is a necessary step in the doing of a production job (Allen).

TEST--An examination or quiz; any kind of device or procedure for measuring ability, achievement, understanding, and similar items; used in step IV of the related technical information lesson.

TESTS, TYPES OF--See page 31.

TRADE--A vocational pursuit requiring both manipulative skills and technical knowledge, characterized by entrance through the apprenticeship plan of training.

TRADE ANALYSIS--See analysis, trade.

TRADE, MULTIBLOCK--An occupation that can be divided into several blocks in order to effect a logical analysis.

TRADE, SINGLE-BLOCK--A trade in which all jobs can be included in one division or block for purpose of analysis.

TRADE, SKILLED--An industrial occupation requiring a high degree of skill, usually in a wide range of related activities and secured through a combination of job instruction, trade instruction, and work experience, such as apprenticeship or a cooperative industrial program.

TYPE JOBS--Imaginary jobs that correspond exactly to the specifications for any degree on the difficulty scale; often used as the basis for related and technical information lessons.

UNIT, INSTRUCTIONAL--A major subdivision of a block or a course devoted to only one type of work or technical subject.

UNIT TEST--A test covering the content of one instructional unit.

DEFINITION OF MOCK-UP

Mock-up--An unnatural layout or arrangement of real parts or assemblies (often mounted on a panel) which shows the interrelationship of the several parts of a mechanical, hydraulic, electrical, or other system, and which can be made to operate upon application of power.

CHARACTERISTICS OF A MOCK-UP

1. It must have the distinctive parts of the real thing
2. It must function upon the application of some type of force or energy
3. Often the mock-up must be simplified for teaching purposes
4. Mock-ups must be designed for some specific purposes; as

    a. How the mechanism operates
    b. For training in trouble shooting
    c. To teach a wiring diagram, or a flow circuit
    d. To emphasize some principle by making visible a portion of the insides of the mechanism (with glass tubing, plastic cylinder, or other suitable material).

EXAMPLES OF MOCK-UPS

1. Remote control wiring system
2. Butane gas hot plate unit
3. Pumping engine oil pressure and heat control units
4. Complete automobile electric system
5. Automobile brake system
6. Radio AM-FM dynamic demonstrator
7. Hydraulic wheel retraction system from airplane
8. Lighting system on airplane
9. Water system in a residence
10. Petroleum emulsion treating unit
11. Principles of refrigeration

BIBLIOGRAPHY:

1. Weaver & Bollinger Visual Aids, D. Van Nostrand Company, Inc., New York, 1949, pages 114-116
2. Dale Audio-Visual Methods in Teaching, The Dryden Press, 386 Fourth Avenue, New York, 1946, pages 88-90
3. Haas & Packer Preparation and Use of Visual Aids, Prentice-Hall, Inc., New York, 1946, pages 148-150

WALL CHARTS

Wall charts are visual aids that assist in the discussion of most things in the mechanical and technical fields, especially when words are not sufficient for clear understanding. The charts may vary in size, color, and type, but in all cases, the purpose is the same--to enable learners to comprehend the subject thoroughly by understanding relationship of parts, functions of component parts, size and position of different parts, and "how it works" in general.

Charts may be classified as follows:

1. Data
2. Pictorial
3. Schematic
4. Diagrammatic
5. Animated
6. Phantom View
7. Folding
8. Graphic
9. Progress
10. Exploded View

Each type of chart has a specific purpose and is designed to accomplish certain definite ends. The charts are used in a large number of cases where it is not possible to present the real object, or in cases where the objects are too large or too small for group instruction. In some cases, the chart is an enlargement and in other cases a reduction of the object shown. Following information gives more detail about each type of wall chart.

1. DATA CHART

The data chart often covers the same material available in handbooks, but the chart makes them more readily accessible and usable. This form of chart covers such data as drill sizes, decimal equivalents, weights of materials, capacity of wires, and hundreds of other items of information.

2. PICTORIAL CHART

The pictorial chart varies greatly in form and content, but it usually consists of enlarged photographs or pictures which are a valuable supplement to the instructor's description. Charts of this kind enable the students to form the correct visual images and learn the relations of important parts in the subject under discussion. Subjects covered by this type of chart include machines, manufacturing processes, historical mechanisms, tool and machine identification, and architectural details.

3. SCHEMATIC CHART

The schematic chart is particularly valuable in showing how mechanisms operate that are actuated by electric, pneumatic, hydraulic, or other power. This type of chart often shows a systematic plan, schematic arrangement, a diagram of connections, or relation of part to part to explain how the relations of parts produce an effect.

4. DIAGRAMMATIC CHART

The diagrammatic chart is an effective way of depicting the wiring diagrams, hydraulic lines, or pneumatic layout connected with a machine, job, or project. Symbols are used to represent the meters, batteries, valves, pumps, and various other things as they apply to the different trades. This type of chart is often used to convey information to electricians, oil burner and refrigeration "trouble shooters," radio technicians, and workers in other maintenance or service jobs.

5. ANIMATED CHART

The animated chart has one or more moving parts that distinguishes it from other charts. Charts in this classification are particularly valuable for instructional purposes because they not only create attention, but also maintain interest over a considerable period of time. For example, when it is desirable to show the line of travel of a part of a mechanism or indicate any change of conditions, the animated chart is to be preferred.

6. PHANTOM VIEW CHART

The phantom view chart aids understanding because it shows interior or hidden parts without obliterating the outer shell or surfaces. In many situations this form of picture is to be preferred to a sectional view because it shows each part as it actually exists.

7. FOLDING OR MULTIPLE LEAF CHART

The folding type of chart is most instructive and has found considerable favor with manufacturers of engines, motors, and other complicated machinery. It is a unique way of showing the internal working parts of a mechanism and at the same time confine the material to a compact form.

8. GRAPHIC CHART

The graph type is an economic form of teaching device that has its chief advantage in the ease with which information may be imparted and comparisons and deductions made. The graphic chart often covers such information as horsepower, output, electric consumption, engine efficiency, and an endless variety of data of many and various subjects. There are many forms of graphs in general use, but in trade work it is sufficient to be familiar with the following types:

a. 100% bar graph
b. Multiple bar graph
c. Pictorial bar graphs
d. Sector graphs
e. Curve graphs

9. PROGRESS CHART

The progress chart, as its name implies, indicates the progress being made by individuals, the completion of work in production, or the achievement in other situations about which information is wanted. The progress chart usually involves only two factors--"Who" and "How much." It is a common form of record used in vocational schools to keep the current progress of class members in shop work.

10. EXPLODED CHART

The exploded-view chart or drawing, is one form of pictorial chart. It is particularly valuable to interested individuals in the understanding of a complicated mechanism. The chart shows the various parts deployed in the sequence and extended position in which they exist when assembled. This form of picture drawing has replaced, in many situations, the detailed mechanical drawings and assembly views formerly used. Charts of this kind, when available and pertinent, will aid teaching and expedite learning.

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VISUAL AIDS--THEIR CONSTRUCTION AND USE, Weaver and Bollinger, D. Van Nostrand Company, Inc., 250 Fourth Avenue, New York 3, New York, 1949. List Price...$4.75

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REPORT OF SECOND ANNUAL WORKSHOP FOR COORDINATED VOCATIONAL-ACADEMIC EDUCATION

UNIT SEVEN: Orientation to Cooperative Training

THE TEXAS VOCATIONAL
PROGRAM FOR STUDENTS
WITH SPECIAL LEARNING NEEDS

C.V.A.E.

Brownwood, Texas July 29—August 2, 1968

TEXAS EDUCATION AGENCY
DEPARTMENT OF VOCATIONAL EDUCATION
AUSTIN, TEXAS

VT007684

Second Annual Workshop
for
Coordinated Vocational-Academic Education Teachers

July 29-August 2, 1968

Brownwood, Texas

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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UNIT SEVEN: Course Objectives, Outlines and Instructional Materials for ORIENTATION TO COOPERATIVE TRAINING

Seventh of a Seven-Unit Muster comprising the Total CVAE Workshop Report.

TEXAS EDUCATION AGENCY

Department of Vocational Education
Coordinated Vocational-Academic Education

AUSTIN, TEXAS

COURSE OBJECTIVES

COOPERATIVE TRAINING ORIENTATION

Objectives of the Course

1. To emphasize the basic standards of cooperative training and the underlying reasons for these standards, as they relate to Coordinated Vocational-Academic Education.

2. To orient the teacher-coordinator as to duties and responsibilities.

3. To develop an understanding of, and skill in using methods of presenting related technicals instruction and in leading pertinent discussions with students.

4. To develop understandings of procedures and techniques of determining industrial training needs of the community among both student and adult group.

5. To develop in the coordinator understanding of techniques of analyzing problems which he encounters in the operation of his program and, through actual conference leadership, acquire skill in leading groups of students, advisory committees, and industrial groups in problem-solving conferences.

6. To assist individual coordinators, through conference procedure, in analyzing and reaching logical solutions to real problems related to their instructional programs.

COURSE OUTLINE

30 HOUR ORIENTATION FOR NEW COORDINATED VOCATIONAL-ACADEMIC EDUCATION COORDINATORS

I. INTRODUCTION TO VOCATIONAL COOPERATIVE EDUCATION 3 HOURS

A. INTRODUCTIONS
  1. TEACHERS
  2. STUDENTS (FILL OUT NAME CARDS)

B. HISTORY OF VOCATIONAL COOPERATIVE EDUCATION
  1. EARLY HISTORY
  2. OTHER VOCATIONAL PROGRAMS AND THEIR RELATIONSHIP TO VOCATIONAL COOPERATIVE EDUCATION
  3. RELATIONSHIP TO OTHER COURSES IN HIGH SCHOOL
  4. VOCATIONAL COOPERATIVE EDUCATION
    a. CO-OP
    b. LABORATORY TYPE PROGRAM
    c. SUPERVISORS AND TEACHER TRAINERS
    d. QUALITY PROGRAMS

II. THE COORDINATOR 5 HOURS

A. A PROFESSIONAL PERSON
  1. AMERICAN VOCATIONAL ASSOCIATION
  2. TEXAS STATE TEACHERS ASSOCIATION
  3. CIVIC ORGANIZATIONS
  4. CHURCH
  5. CHAMBER OF COMMERCE
  6. ATTENDS WORKSHOPS
  7. PARTICIPATION IN OTHER SCHOOL ACTIVITIES

B. PERSONAL QUALITIES NEEDED
  1. APPEARANCE
  2. USE OF LANGUAGE (WRITTEN AND SPOKEN)
  3. EXTROVERT PERSONALITY

III. STARTING THE YEAR (MONTH OF AUGUST) 5 HOURS

A. NEWSPAPER ARTICLES
  1. ON COORDINATOR
  2. ON PROGRAM (OLD AND NEW)

B. LETTERS, POST CARDS, PHONE CALLS
  1. TO STUDENTS AND PARENTS
  2. TO PROSPECTIVE EMPLOYERS

C. SPEAKING ENGAGEMENTS
  1. CIVIC CLUBS
  2. RADIO AND TV
  3. SCHOOL BOARDS

D. ADVISORY COMMITTEES
   1. SELECTION (CONSULTANT, PRINCIPAL, AND SUPERINTENDENT)
   2. OBJECTIVES OF THE COMMITTEE
   3. NUMBERS OF MEETINGS EACH YEAR

E. SELECTION OF STUDENTS
   1. NAMES AND ADDRESSES OF PROSPECTIVE STUDENTS
   2. APPLICATION BLANKS
   3. RECOMMENDATIONS FROM OTHER TEACHERS
   4. ELIGIBILITY OF STUDENTS
   5. GUIDANCE AND COUNSELING

F. LIBRARY LIST (TO BE GIVEN TO STUDENT)

G. SELECTION OF TRAINING STATIONS
   1. TYPES OF TRAINING STATIONS (QUALIFICATIONS)
   2. FACTORS TO CONSIDER
   3. UNDESIRABLE STATIONS
      a. LOCATION
      b. EMPLOYEES

H. PLACEMENT
   1. SEND OUT IN THREE'S
   2. PHONE
   3. EMPLOYERS REQUEST
   4. ALREADY HAS JOB, ETC.
   5. CHILD LABOR PROVISIONS

I. EQUIPMENT AND CLASSROOM ARRANGEMENT
   1. TELEPHONE
   2. DESKS OR TABLES
   3. FILE CABINETS (MAGAZINE AND PAMPHLET)
   4. PIGEON HOLES
   5. WORK AREA
   6. BULLETIN BOARD AND CALENDAR

J. TEACHERS DAILY PLAN BOOK
   1. AFTERNOON SCHEDULE
   2. ARRANGEMENT OF CLASSES
   3. CHANGE OF SCHEDULE - STUDY HALL

MONTH OF SEPTEMBER

K. ORGANIZATION REPORT
   1. FILLING OUT REPORT
   2. STUDENTS NOT PLACED (TWO WAYS ON SCHEDULES)

L. TRAINING PLANS
   1. FILL OUT SAMPLE PLAN
   2. SELECTION OF INFORMATION ON BACK

M. STUDY GUIDES AND ASSIGNMENT SHEETS
   1. 4-STEP LESSON PLAN
   2. SUPERVISED STUDY

N. GROUP DISCUSSION

IV.	OPERATING A PROGRAM	4 HOURS

A. TRAVEL REPORTS AND WORK SCHEDULE

B. RECORDS
  1. PERMANENT RECORDS
  2. FOLLOW-UP RECORDS
  3. GRADING SYSTEM
  4. STUDENT PERSONNEL FILES
    a. EMPLOYER'S PERIODIC RATING
    b. STUDENT WORK RECORD

C. TYPICAL PROBLEMS
  1. LETTER FROM PARENT (HANDOUT)
  2. COMMON PROBLEMS (USE HANDOUTS)

D. PUBLICITY AND PUBLIC RELATIONS

E. CLOSING AND ORGANIZATION REPORT
  1. FIRST SEMESTER
  2. SECOND SEMESTER

F. DEPARTMENT OF LABOR REGULATIONS

V.	CLOSING A PROGRAM	4 HOURS

A. RECRUITMENT AND APPLICATIONS

B. CIVIC CLUBS (AWARDS)

C. EMPLOYER-EMPLOYEE BANQUET

D. LETTERS TO EMPLOYERS

E. CLOSING REPORT

VI.	YOUTH ACTIVITIES	5 HOURS

VII.	REVIEW AND TEST	4 HOURS

A. PANEL PROGRAM

B. WRITTEN TEST

INSTRUCTIONAL MATERIALS

COORDINATED VOCATIONAL-ACADEMIC EDUCATION CO-OP

I. ¼ of each nine weeks grade is for the 9 weeks test.

II. ¼ of each nine weeks grade is for Coordinated Vocational-Academic Education (C.V.A.E.) activity.

III. ½ of each nine weeks grade is for daily work.

A. Basic daily work grades are in ink and represent work as follows:
1. Written assignments
2. Written reports
3. Written term themes
4. Daily, weekly or unit tests

B. Grades in pencil are for Daily Logs for on-the-job work and for vocational study. All students should make A or B on all of these and are subject to penalty if they do not do so.

C. Nine Weeks daily work averages are based upon the number, length, and difficulty of assignments as well as on the quality of work. In other words, a high average on an inadequate amount of work will not justify a high grade. The attitude and classroom conduct of the student will also affect this grade.

IV. Grade averaging
In all cases involving the averaging of grades the following values will be used.

A = Superior = 10

B = Above Average = 9

C = Average = 8

D = Below Average = 7 Passing

F = Failing = 6 Substandards work near passing

F = Failing = 3 Work submitted but of little value

(F)= Failing = 0 No work submitted. No make-up

V. Grades for on-the-job performance

Separate grades are recorded for on-the-job performance. Employers or Training Supervisors are requested to fill out Rating Sheets on each trainee. These rating sheets are used as the bases for the on-the-job grade, but other factors may be considered.

All credit for the course (1½ credits per semester) is recorded with the classroom grade.

EVALUATION OF TRAINING STATIONS FOR COOPERATIVE TRAINING

Factors	Very Poor	Poor	Fair	Good	Superior
1. Opportunity for Permanent Employment					
2. Opportunity for Advancement					
3. Amount of Training					
4. Regularity of Employment					
5. Pay Schedule					
6. Interest of Employer in Training					
7. Up-to-Date Facilities and Methods					
8. Hazard and Work Conditions					
9. Reputation of Firm					
10. Attitude of Employees					

Remarks____

____

____

____

_________________________________ Chairman of Advisory Committee

_________________________________ Coordinator

CVAE-619

Selection of Training Stations
for
Industrial Cooperative Training

The chief factor in selecting a particular training station in any particular occupation is the attitude of the employer and his employees toward the cooperative training plan and their willingness to provide well rounded work experiences. The responsibility of the employer goes much farther than merely providing the student-learner with a job. In addition to the above there are several other factors which should influence the coordinator in placing students in a particular training station.

With the assistance of the advisory committee the coordinator should consider the following:

1. Respectability and responsibility of the employer.
2. Equipment available for training.
3. Competent employees.
4. Volume of business.
5. Variety of work available for training.
6. Wages to be paid a student-learner.
7. Company policies and the student-learner.
8. Standards of workmanship to be met.
9. Degree of specialization to be met or required.
10. Existing employer-employee relationship.

All places of employment for student-learners must meet with the approval of the advisory committee.

Training stations located remote from the community, and those located in unsavory or disreputable sections should be avoided.

NOTE:

The State prohibits the employment of minors in places of "Business located in the same building with, or adjacent to a place where alcoholic beverages are sold".

EMPLOYERS PERIODIC RATING

STUDENT____________________ DATE____________________
TRAINING STATION____________________ RATED BY____________________

DIRECTIONS: Please circle only one of the numbers in each line of blanks (from 1 through 10) opposite each of the factors in the left-hand column which you think nearest indicates the student's rating for the past six weeks.

FACTORS	UNSATISFACTORY	BELOW AVERAGE	AVERAGE	ABOVE AVERAGE	EXCELLENT
PROGRESS Has he advanced in skill and knowledge during the past six weeks?	1 2 Has made practically no progress.	3 4 Has progressed in only a few phases of his training.	5 6 Has made average progress in his training.	7 8 Has advanced beyond expectations.	9 10 Exceptional progress made in skill and knowledge.
INITIATIVE Can he originate and carry through on ideas?	1 2 Has to be told everything to do.	3 4 Seldom goes ahead on his own.	5 6 Goes ahead on routine matters.	7 8 Frequently looks for additional work.	9 10 Always finding jobs that need to be done.
RELIABILITY Can the student be depended upon in his work?	1 2 Can seldom be relied upon.	3 4 Frequently fails to come through.	5 6 Can be relied upon in most cases.	7 8 Only occasionally fails to come through.	9 10 Can be relied upon implicitly in all matters.
WORK ATTITUDE Does he have a good attitude toward his work?	1 2 Always bored; shows little enthusiasm.	3 4 Rationalizes his shortcomings and mistakes.	5 6 Normally enthusiastic about his work.	7 8 Tries to improve his work in most cases.	9 10 Is always alert upon finding ways to improve work.
COOPERATION Does he work well with others?	1 2 Always wants his way; is hard-headed.	3 4 Hard for others to work with.	5 6 Usually congenial and easy to work with.	7 8 Works well with his associates.	9 10 Cooperates excellently in all matters.

ADDITIONAL REMARKS:____

CVAE-614

WEEKLY WORK EXPERIENCE LOG

Student:____________________ Week Beginning Monday:_______________

Training Station:__________________ Occupation:__________________

Supervisor:________________________

WORK ACTIVITIES ON THE JOB	Hours Worked Daily							
	M	T	W	T	F	S	S	Total
Total Hours Worked Daily								

School Hours Worked During Week. . . . . .____________

Extra Hours Worked During Week . . . . .____________

Total Hours Worked During Week . . . . .____________

School Wages Earned During Week. . . . . .____________

Extra Wages Earned During Week . . . . .____________

Total Wages Earned During Week . . . . .____________

CVAE-603

Suggestions to Coordinators on Securing Cooperation and Goodwill of School Faculty

DO

1. Be friendly and sincere with all members.
2. Find something good about each teacher's work and compliment her.
3. Volunteer for your share of extra-curricular duties.
4. Be tactful and diplomatic.
5. Publicize the accomplishments of your program--not what you plan to do.
6. Adopt a professional attitude toward your work; engage in professional school activities.
7. Occasionally ask "favors" of members you wish to cultivate, particularly in regards to recommending desirable student for your program.
8. Thank teachers for the slightest favor; make them feel that they have an important contribution.
9. Be businesslike and thorough in the conduct of your program.
10. Consult with other teachers frequently; ask their opinions on problems.
11. Try to be the first teacher to make school reports; be sure they are properly prepared.
12. Admit you are wrong when you are; don't hedge or offer excuses.

DON'T

1. Don't argue your point even though you know you are right.
2. Don't make facetious remarks about general education philosophy, objectives, methods, etc.
3. Don't engage in arguments on controversial questions.
4. Don't be opionated or dogmatic; try to keep your mind open to both sides of a question.
5. Don't indulge in petty gossip nor join cliques within the faculty.
6. Don't do anything that might antagonize other teachers by reminding them that you make more salary, have a lighter teaching load, and spend less time in school than they do.
7. Don't be a chronic "griper" and fault-finder; do the best you can with what you've got, and tactfully try to improve conditions.
8. Avoid doing anything that will suggest loafing, both in school and in town.
9. Don't blame all the weaknesses of your program on the school administration.
10. Don't become a problem to the principal; become so valuable that he can hardly do without you.

CVAE-611

DAILY COORDINATION ITINERARY

COORDINATED VOCATIONAL-ACADEMIC EDUCATION

Hours of Coordination________________________DATE__________________

TRAINING STATIONS	Remarks and Points to Remember
Training Sponsor: Phone: Trainee:	
Training Sponsor: Phone: Trainee:	
Training Sponsor: Phone: Trainee:	
Training Sponsor: Phone: Trainee:	
Training Sponsor: Phone: Trainee:	

CVAE-616

TRAINING STATION________________________________

Name of Student--trainee________________________Date________________

School__________________________________Store & Department________

I. Work

1. Knowledge of Job
   - ___Exceptional
   - ___Good
   - ___Average
   - ___Poor

2. Quality of work accomplished
   - ___Exceptional
   - ___Good
   - ___Average
   - ___Poor

3. Amount of work accomplished
   - ___More than usual
   - ___Usual amount
   - ___Less than usual

4. Industry (How hard he works)
   - ___Above average
   - ___Average
   - ___More than average

5. Amount of supervision required
   - ___Less than average
   - ___Average
   - ___More than average

6. Interest (liking for job)
   - ___Enthusiastic
   - ___Interested
   - ___Indifferent
   - ___Dislikes

II. The Student

1. Initiative
   - ___Excellent
   - ___Good
   - ___Average
   - ___Poor

2. Judgment
   - ___Excellent
   - ___Good
   - ___Average
   - ___Poor

3. Appearance
   - ___Excellent
   - ___Good
   - ___Average
   - ___Poor

4. Maintaining of pleasant Human relations
   - ___Above average
   - ___Average
   - ___Below Average

5. Attitude toward criticism
   - ___Welcome criticism
   - ___Rejects criticism

6. Results of criticism
   - ___Rapid Improvement
   - ___Average Improvement
   - ___Slow Improvement
   - ___No Improvement

COMMENTS:____

______________________________________ ______________________________
Signature

Note: Please complete, seal in envelope, and give to student to return.

Thank you,

Coordinator

CVAE-601

COORDINATED VOCATIONAL-ACADEMIC EDUCATION COOPERATIVE

DAILY COORDINATION

TRAINING STATIONS		MON	TUE	WED	THUR	FRI

TOTAL HOURS OF COORDINATION THIS WEEK ____

TOTAL HOURS OF COORDINATION THIS SEMESTER ____

TOTAL HOURS OF COORDINATION TO DATE ____

TOTAL MILES TRAVELED THIS WEEK ____

TOTAL HOURS CLASS MET __________

NUMBER OF CALLS ON PARENTS OF PUPILS _____

NUMBER OF CONTACTS WITH EMPLOYERS ________

TOTAL HOURS SPEND IN ACTIVITIES OTHER THAN TEACHING AND COORDINATION ____________

TOTAL MILES TRAVELED TO DATE ____________

ADDITIONAL REMARKS:

CVAE-602

COORDINATOR'S PLAN FOR GROUP DISCUSSION

Key
Min.
Approx.Time

SUBJECT OR TOPIC

AIM (From Coordinator's viewpoint)

REFERENCES

MATERIALS
and/or
AIDS

INTRODUCTORY INFORMATION
(In terms of learner)

PROCEDURE (List points to be covered)	METHOD OR TECHNIQUE (List how or what you plan to do and who is to do it.)

CVAE-600

PROCEDURE
(List points to be covered)

METHOD OR TECHNIQUE (List how or what you plan to do and who is to do it.)

GROUP PARTICIPATION
(List what you plan to do)

METHOD OR TECHNIQUE
(List how you plan to do it)

SUMMARIZATION and/or CONCLUSIONS

(Suggested topic for near-future discussion:______________________)

TEXAS EDUCATION AGENCY
Department of Vocational Education
Austin, Texas

ORGANIZATION REPORT

COOPERATIVE PART TIME TRAINING

Program ____________________

County: ____________________

City: ____________________ School: ____________________

Time of Day Related Class Meets: __________ to __________ Total Hours per Week __________

Starting date of class: ____________________ Planned closing date: ____________________

Length of course in Weeks: ____________________ Total Starting Enrollment: Male __________ Female __________

Name of Teacher-Coordinator: ____________________

Semester: 1st ____________________ 2nd ____________________

NAME OF STUDENT	M or F	Grade	Age	Occupation	Employer
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					

ADVISORY COMMITTEE

NAMES	Organization or Business Represented	Official Position

Date: ____________________

Approved: ____________________
Local Superintendent or Director

____
Vocational Division Director

TEA – 500

VOC-042

TEXAS EDUCATION AGENCY
Department of Vocational Education
Austin, Texas

CLOSING REPORT

COOPERATIVE PART TIME TRAINING

Program ____________________

County: ____________________

City: ____________________ School: ____________________

Date Class Started: ____________________ Date Class Closed: ____________________

Time of Day Related Class Met: __________ to __________ Total Hrs. per Week __________

Name of Coordinator: ____________________

Semester: 1st __________ 2nd __________

Students in Class When Report is Made	Total Hours		Students in Class When Report is Made	Total Hours	
	On Job	In Class		On Job	In Class
1.			13.		
2.			14.		
3.			15.		
4.			16.		
5.			17.		
6.			18.		
7.			19.		
8.			20.		
9.			21.		
10.			22.		
11.			23.		
12.			24.		

STUDENTS ENROLLED SINCE ORGANIZATION REPORT

Name of Student	Date Entered	Grade	Age	M or F	Occupation	Employer
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						

FOR REPORTING PERIOD

(1) Total cumulative enrollment: Male ________ Female ________
(2) Total hours class met . . . . ________
(3) Number of calls on parents of pupils . . . . ________
(4) Number of contacts with employers . . . . ________
(5) Number of advisory committee meetings . . . . ________
(6) Total hours spent in coordination . . . . ________
(7) Number of meetings with employer and employee organizations or groups . . . . ________

Date: ____________________ Signed: ____________________
Coordinator

____
Local Director or Superintendent

____
Vocational Division Director

TEA – 501

VOC-043

TEXAS EDUCATION AGENCY
Department of Vocational Education
Austin, Texas

Grade ______ Time of day related class meets __________

Age ______

Cooperative Training Plan

PROGRAM ________________________

This training plan is to (1) define clearly the conditions and schedule of training whereby student ________________________ is to receive training as a (an) ________________________ and (2) serve as a guide to the cooperating parties: the ________________________ (Company) and the ________________________ Public Schools, in providing the student with opportunities for training in the basic skills of the occupation and the technical information related to it. In order that a systematic plan which provides for well-rounded training can be followed, a schedule of work experiences and a course of study paralleling it have been worked out and agreed upon by the employer and representative of the school. They are listed on the reverse side of this page.

The student agrees to perform diligently the work experiences assigned by the employer according to the same company policies and regulations as apply to regular employees. The student also agrees to pursue faithfully the prescribed course of study and to take advantage of every opportunity to improve his efficiency, knowledge, and personal traits so that he may enter his chosen occupation as a desirable employee at the termination of the training period.

In addition to providing practical instruction, the employer agrees to pay the student for the useful work done while undergoing training according to the following plan:

1. The beginning wage will be $________ per ________ for ________ hours per school week, which amount is approximately ________ per cent of that paid competent full-time employees in the same occupation in the community.

2. A review of the wages paid the student will be made jointly by the employer and coordinator at least once each semester for the purpose of determining a fair and equitable wage adjustment consistent with the student's increased ability and prevailing economic conditions.

The training period begins the ______ day of __________________, 19___, and extends through __________________, 19___. There will be a probationary period of ______ days during which the interested parties may determine if the student has made a wise choice of an occupation, and if the training should be continued.

This plan has been reviewed and recommended by the Local Advisory Committee. It may be terminated for just cause by either party.

Approvals:

________________ (STUDENT)	________________ (NAME OF EMPLOYER)
________________ (PARENT OR GUARDIAN)	________________ (NAME OF COMPANY)
________________ (CHAIRMAN, LOCAL ADVISORY COMMITTEE)	________________ (TEACHER-COORDINATOR)
	________________ (DIRECTOR, VOCATIONAL EDUCATION DIVISION)

(back of form on page 25)

WORK EXPERIENCES TO BE PROVIDED	RECORD OF WORK	OUTLINE OF STUDY ASSIGNMENTS	RECORD OF STUDIES

END 7-3-69